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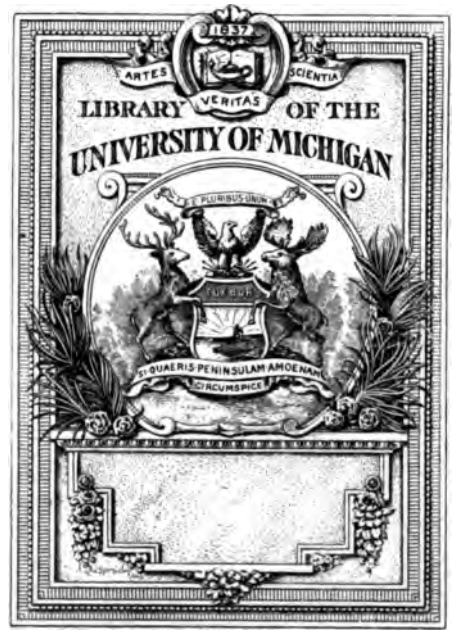
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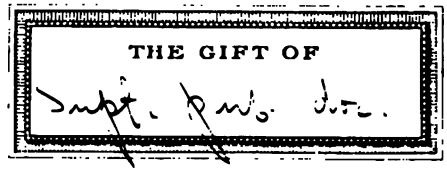
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APRIL, 1908

No. 331

WASHINGTON
GOVERNMENT PRINTING OFFICE
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MONTHLY CONSULAR *and* TRADE REPORTS

Washington, D. C. APRIL, 1908 No. 331

FOREIGN COMMERCE.

MEXICO.

COMMERCIAL AND INDUSTRIAL CONDITIONS.

EXTENSIVE RESOURCES AND GENERAL DEVELOPMENT—UNITED STATES PRODUCTS IN DEMAND.

Special Agent Arthur B. Butman furnishes the following report on trade conditions in the Mexican Republic, with especial reference to the States of Vera Cruz, Jalisco, and San Luis Potosi:

The city of Vera Cruz has a population of 30,000, and is the chief port of entry of the Mexican Republic. It has a good harbor, well protected, with a minimum depth of 33 feet of water throughout, and flanked by fine stone docks.

Much labor, thought, and capital have during recent years been devoted by the municipality to the general advancement of this commercial Gulf city. Improvements in sanitation are gradually being accomplished; a system of sewerage has been introduced, with which the principal streets are already connected. The general health of the town is improving, the death rate having decreased considerably, as compared with two years ago. Many new buildings are under process of construction throughout the city, although, owing to the scarcity of carpenters, masons, and other artisans, slow progress is being made. Plans have already been accepted for the erection of a new railroad terminal station at an estimated cost of $6,000,000 (Mexican), and it is expected that the work will be in progress early in 1908. All railroads running into Vera Cruz will use the new terminal.

The industries of the city include cigar manufactories (the principal tobacco plantations of Mexico being situated in the State of Vera Cruz), soap factories, and a petroleum refinery with a capacity of 350,000 gallons per month, using crude oil from the United States.

COMMERCIAL ACTIVITY—READY-MADE CLOTHING.

A constant growth in the commercial activity of the port is shown. This is especially gratifying, since the most important advance has been in trade with the United States, although other countries enter into the progress. Cattle, lumber, foodstuffs, and machinery constitute the principal imports from the United States. England is the chief source of supply for textiles, followed by France and Spain, France furnishing a certain quantity of the finest qualities. In importations of chemicals, those of German manufacture head the list, being about twice in quantity those furnished by the United States.

The trade with the United States in machinery and lumber is important, not less than 10,000,000 feet of lumber being annually received at this port. Regarding lumber for this market, I am informed that yellow pine is found to be the most desirable, affording best results under the prevailing climatic influences.

American ready-made clothing (women's) of the cheaper qualities should find a good market in Vera Cruz, the present supply being almost wholly furnished by France and Spain. Aside from black and white for women's skirts and waists, the favorite colors seem to be red and various shades of purple. All articles of women's wearing apparel carry a stronger appeal to the native buyer if adorned, more or less lavishly, with cheap laces and embroideries. France supplies the higher grades of women's headgear, but for the cheaper qualities a market for ready-trimmed hats from the United States might be found.

Men's ready-made clothing in the lighter weight woolen materials finds a good sale; also hats in felt, these being worn, like the native wool sombrero, during the entire year. Men's hats are at the present time principally furnished by English makers.

SHOE TRADE.

American shoes are on sale in various stores in Vera Cruz, but there are no exclusive shoe stores in the city and no dealers carrying American goods exclusively. Shoes form one of many lines of the retailer's stock in trade, and goods of Spanish, French, and American manufacture exhibited side by side individually win or lose the buyer, as his fancy may dictate. I find American-made shoes in good favor, but the price asked—$9.50 to $13.50 Mexican—being beyond what the masses are able to pay, restricts any considerable increase of trade in this city. Spain, our strongest foreign competitor, furnishes for this market a hand-made shoe of good workmanship which retails for less money than the American product.

Being situated within the Tropics, Vera Cruz offers a moderately large field for the sale of white canvas shoes for both sexes in Oxfords and bals. To meet the demands of this trade these shoes should be of good quality, well made, and priced at a medium figure.

STEAMSHIP LINE TO BRITISH COLUMBIA.

That Canada is alive to the status of Mexico's commerce and its future prospects is evinced by the recent establishment of the Canadian-Mexican Pacific Steamship Company, operating between British Columbia and ports on the west coast of Mexico. The inaugural boat of this line sailed from Vancouver on May 1 last with a cargo of lumber and coal and carried as a return cargo salt, tobacco and cigars, fruits, and ore. From the start the freight traffic of the line has increased. The last steamer arriving at the port of Salina Cruz carried its full cargo of 4,000 tons freight. The amount of interest shown in the enterprise in both this country and British Columbia may be said to be responsible for the success thus far obtained. Two boats of 4,000 tons each, capable of 12 knots an hour, are operated at present, with monthly sailings in each direction. Accommodations for passengers are provided to the number of 20 saloon and 100 intermediate, and the passage between Vancouver and Mazatlan is made in eight and one-half days.

RESULTS OF CANADIAN ENTERPRISE.

Banana growing in Mexico is rapidly assuming importance. Recognizing this, the steamship company has installed special features of ventilation and a full modern equipment for facilitating the handling of fruit on its vessels. Canadian manufacturers and exporters are making a strenuous effort, since the inauguration of this line of steamers, to increase their sales in Mexico's markets. The merchants of the Republic are furnished at just as low or even lower prices than those previously proffered by American manufacturers, with the assurance of cheaper freight rates on the part of the Canadian competitors.

Formerly no appreciable trade relations existed between British Columbia and the west coast of Mexico, owing to the expense and attendant delays of rehandling and reshipment of freight at San Francisco, via which port goods were shipped. During the past six months, however, the exportation from Mexico of various fruits, hard woods, tobacco, and cigars has shown a considerable increase, while importations into the Republic from Canada, especially of agricultural implements, have assumed marked proportions.

CONDITION OF COFFEE AND SUGAR CROPS.

It is estimated that the exports of coffee from Mexico this year will be in the neighborhood of 50,000,000 pounds, and owing to the high prices the outlook for the planters is a very favorable one. The disadvantage of improper curing of the bean, which formerly prevailed in this country, has been done away with, and improved methods, embracing all modern appliances, are now in general use on all the large plantations. Better grades of coffee and ready sales at high prices have resulted. Recent reports from the coffee districts are to the effect that the trees are loaded with berries and there is every indication that excellent crops may be expected. Picking begun about December 1.

Sugar conditions in the coast regions are excellent. Abundant rains have occurred, rendering a fine cane crop, which is well matured and will soon be ready for cutting. It is estimated that the tonnage from this section will considerably exceed that of last year. In the interior sugar-growing State of Morelos opposite conditions prevail. Rains have been scarce and the majority of the cane has failed to come to maturity. Here the crop is reported to be the lightest in years and is expected to fall 30 per cent below that of last year.

ESTABLISHMENT OF IMPORTANT INDUSTRY.

That the immense tracts of long-leaf yellow pine in Mexico may, in addition to the lumber annually produced, be made to furnish the Republic and foreign markets as well with turpentine there has been recently established in the State of Michoacan, near Morelia, a factory for the production of raw turpentine, having a capacity of 200,000 gallons yearly. The manufacture of turpentine has been carried on in a small way in Mexico for some time, but in the crudest manner, according to the fashion handed down by the Indians, and naturally it has not made any appreciable commercial showing. It is expected, however, that with the erection of the new plant, which is one of the most modern in existence, the establishment of a successful turpentine industry in the Republic is now launched. As

climatic and other necessary conditions obtain here, it is hoped that with the low cost of labor it may be possible for Mexico to enter into and become a controlling factor in the foreign turpentine trade. The plant is now in active running order.

UNITED STATES LEADS IN COMMERCE.

The general industrial and trade conditions of Mexico are at present such as should command attention in the United States. The country is rapidly advancing educationally, industrially, and commercially; the feeling of the people toward the United States is most friendly, while purchases of American manufactured products are already large and capable of substantial increase.

The total trade of Mexico for the fiscal year 1907 was valued at $239,727,936 gold, of which $116,214,967 represents imports, and $123,512,969 exports (including bullion and specie). The value of the imports from the United States was $72,895,539, and of exports to the United States $87,652,943. The United States takes by far the larger proportion of Mexico's exports and furnishes the greater percentage of her imports. Of the share of Mexico's imports furnished by European countries, Germany supplies most, representing a value of $12,165,767, followed by Great Britain with $11,749,275, France with $8,781,624, and Spain with $3,970,542. Other European countries show much lower figures, and are, in their respective order, Belgium, Italy, Austria-Hungary, and Switzerland.

The above figures, though gratifying as regards the trade of the United States with the Republic, should not create a feeling of overconfidence. Trade with European countries shows a constant increase much larger in proportion than that accredited to the United States. For comparison, the following gains for the fiscal year 1907 over 1906 are noted: Germany, $1,872,739; Great Britain, $1,698,867; France, $728,307; United States, $415,806. The nations of Europe are certainly alive to the importance of Mexico's markets.

The principal articles imported from the United States into Mexico are coal, lumber, gunpowder, manufactures of iron and steel, machinery, raw cotton, wheat, and boots and shoes. Mexico's principal exports to the United States are copper, lead, goatskins and hides, coffee, and textile grasses.

Statistics contained in this report are given as officially issued by the Mexican Government.

MERCANTILE OPPORTUNITIES IN JALISCO.

Jalisco has a leading position in the development of western Mexico. The population is approximately 1,250,000. The State has a coast line of about 300 miles on the Pacific Ocean in which there are three harbors, viz, Las Penas, Chamela, and Purificacion. The varied conditions of climate and the remarkable fertility of the soil render an unusually rich agricultural territory and offer a field for great future development. The land is divided into large haciendas, which are the property of Spaniards and native Mexicans. Guadalajara, the capital, with a population of about 120,000, is the seat of these wealthy haciendados, and has by far the greatest per capita wealth of any city of the Republic.

On the lower table-lands in the valleys a considerable quantity of corn is produced, which is used for home consumption, a portion being employed in the manufacture of alcohol. Although this is the

greatest corn-producing State in Mexico, there are years, such as 1906, when corn is imported from the United States for consumption in Jalisco. On the higher table-lands wheat of good quality is produced, which is milled locally. Several modern mills have been built and equipped with up-to-date machinery. Jalisco flour has a deservedly good reputation.

Suger cane is raised in large quantities. In the valleys of Zapotlan, Tamazula, and Ahualulco there are modern plants producing a good white loaf sugar. Statistics for the fiscal year 1906 show that there were 6,448,060 kilos (kilo=2.2046 pounds) of molasses and 6,196,400 kilos of sugar produced in Jalisco.

Rice is raised in the State, but the quantity is not sufficient for the home demand. This product is brought in from the neighboring State of Colima and the territory of Tepic, where it is raised in large quantities.

ORANGES, TOBACCO, AND TIMBER—WATER POWER.

Oranges of the best quality grown in Mexico are raised in this region, and are shipped to other portions of Mexico, and, to some extent, to the United States. The Mexican Central Railway has had under construction for two years past a spur from its Guadalajara branch to the orange groves of Atotonilco, and this year a special effort is being made to market oranges from this district in St. Louis and Kansas City and Texas points. The oranges here are ready for the market from the middle of October on, and so have the advantage of being a month or so earlier than the California fruit.

In the Las Penas Valley a good grade of tobacco is produced, which is bought on the ground by representatives of the Mexico City cigarette factories and shipped by way of Guaymas and El Paso in bond. The soil in this valley, as in certain districts of the territory of Tepic, notably in the valleys of Santiago, Exquintla, and Compostela, is particularly suited for the raising of a high-class wrapper tobacco. The methods of curing and culture now prevailing are crude; but with good seed and proper culture and curing tobacco raising in the chocolate-colored soil of these coast uplands should be lucrative.

There is considerable pine timber on the mountain ranges which traverse the State, particularly in the main coastal range of the Sierra Madres. Lack of transportation facilities, however, prevents the marketing of this timber.

The State is well-watered, and its water courses provide enormous resources of undeveloped water power. In the city of Guadalajara there is a street railway and lighting plant, which sells power at a reasonable rate to a number of small factories. In the Atemajac Valley, outside the city of Guadalajara, there is a modern 4,000-horsepower plant operating cotton mills and other factories equipped with American electrical machinery. At the falls of Juanacatlán there is also a large plant equipped with electrical machinery manufactured in the United States.

MINERAL RESOURCES.

The mining camps of Jalisco from north to south are Bolaños, Hostotipaquillo, Etzatlan, Ameca, Bautista, Ayutla, Parnasso, Mascota, Navidad, San Sebastian, Guachinango, Cuale, Bramador, Tapalpa, and Zapotlan. The metals produced are silver, copper, gold, and lead. The mines are largely silver mines, which produce small

amounts of gold, while the Autlan copper district is promising. The main producing mine of this district, the San José del Amparo of Etzatlan, which is owned largely by Pennsylvania investors, has been shipping ore for some time, and a 150-ton cyanide plant was opened for operation in January. The veins are strong and extensive in Jalisco, and while the mines are largely undeveloped, conservative experts say that the State will be one of the great mining districts of the Republic when its powerful low-grade ledges are opened up. This is particularly true of the Hostotipaquillo district, an old Spanish district with a record of large production, which was practically abandoned on account of the unsettled conditions. Americans went into this district a few years ago and now the El Favor, Virginia-Cabrera, the Santo Domingo, and half a dozen other mines have sufficient ore blocked out to warrant the erection of large mills. The extension of the Southern Pacific Railway will reach the district and thus solve the transportation problem. The mineral development of Jalisco has been retarded by the rich agricultural resources, which attracted Spanish capital and energy as soon as the surface bonanzas of the mines were exhausted.

COMPARISON OF IRON DEPOSITS OF JALISCO AND OTHER STATES.

The iron deposits of the State of Jalisco are small and, in comparison with those farther south along the coast in Colima, Michoacan, Guerrero, and Oaxaca, are insignificant. Iron is found in the district of Comanja, Tula, and Providencia. At the two places last named foundries have been established and run with intermittent profit, producing a good quality of charcoal iron. In Pihuamo are large bodies of iron ore, practically undeveloped and of a somewhat lower grade. In Colima there are within a radius of 30 miles iron deposits which show at least 60 per cent iron with a low percentage of phosphorus, good bessemer iron, which will run over 60,000,000 tons.

There is one deposit in the State of Michoacán, the Progresso, which measures up 28,000,000 tons of a superior grade of iron. Still farther south, near the mouth of the Balsas River, in the State of Guerrero, there is an immense deposit of iron which has been variously estimated by experts to contain from 220,000,000 to 260,000,000 tons of 63 per cent of iron. From this point down the Guerrero coast there are a number of smaller deposits ranging from 1,000,000 to 20,000,000 tons. In the State of Oaxaca are also a number of deposits; those near the coast are inferior in quality, but those inland are of almost the same quality as the deposits described.

INDUSTRIAL ACTIVITY.

The cattle industry in the State of Jalisco is growing larger every year, and with the importation of better stock from the United States the quality of the cattle is improving.

In the district of Tequila a distillation of the root of the maguey plant is made, named from the district "vino de Tequila," which is sold in large quantities all over Mexico. Brandy is also distilled from the maguey and alcohol from corn and sugar. The combined annual output of the many small distilleries throughout the State is estimated at approximately 4,620,000 liters (liter=0.26417 gallon.)

There are five cotton-goods and textile factories, operating 50,907 spindles and 1,343 looms, and giving employment to 1,917 operators. According to the latest available annual statistics, these factories con-

sumed 1,366,933 kilos (kilo = 2.2046 pounds) of cotton and had sales of an estimated value of $1,393,919 Mexican. Woolens for home consumption are woven in the State.

The cigar and cigarette, soap, candles, match, and brick and tile industries are all of more or less importance. Tanning is a local industry. In Guadalajara there is a small shoe factory with modern equipment of American manufacture.

EXTENSION OF RAILWAY LINES.

There is considerable railway construction in this section at present. It is hoped that in July will be formally opened the extension of the Mexican Central Guadalajara line to the Pacific coast harbor of Manzanillo, where improvements involving large expenditures have been made in port works. When finished this line will provide a needed outlet for western interior points to the Pacific Ocean, thereby opening up channels of trade with the Pacific ports of the United States, British Columbia, Central and South America, and the Far East and rendering the importation of foreign products less expensive.

A considerable work has already been done from the Guadalajara end of the Southern Pacific West Coast trunk line, which is being built from the terminus of Guaymas to the city of Guadalajara, under the name of Cananea, Rio Yaqui, and Pacific Railway. Work is also progressing on the line at Mazatlan. These railways will contribute much to the development of the west coast of Mexico, and will greatly enhance the importance of Guadalajara as a distributing center for the interior western points.

MARKETS FOR AMERICAN MACHINERY.

There is at present a good market for American agricultural machinery and implements of all kinds, and I am told that the demand for these goods is constantly increasing. Although German and English goods are found in competition in many instances, implements of American manufacture of every sort predominate everywhere. Sales of American plows lead, notwithstanding the fact that our German competitors have introduced and tried to popularize here a double-molded board, and also a gang plow. The American-made plow, however, is said to give better satisfaction in every way.

In thrashing machinery the strongest competition is with machines of English manufacture, although here again the American product leads in sales, being better adapted to the needs of the country. The American machine is of lighter weight and simpler construction than the English, and therefore more readily kept in repair by users who are not naturally of a mechanical turn of mind. American-made machines are also lower in price than the English.

Mining machinery used in the mining districts of this region is for the most part of American origin. In the case of mining machinery at least the American manufacturer has studied the needs of his customers and the requirements of packing. Machinery which must be carried over the Sierra trails is sent in sections in the most convenient manner. American electrical machinery has the best reputation here, although the Germans are making efforts to obtain the Mexican trade in electrical devices.

Corrugated iron in large quantities is used in this section. The greater portion is at present imported from England, which makes a

product of greater width than the American, and for that reason is preferred. Dealers state that the American manufacturers would be able to find a good sale in western Mexico for an iron 32 to 36 inches wide. The quality of the American product is good, and the finish better liked than that of its competitor, which is of a dull color. England also holds the market for black sheet iron, principally because of the price, which is less by from 1 to 1½ cents per pound.

MISCELLANEOUS GOODS OF FOREIGN MAKE.

Guadalajara is the center of a large trade in milk cans, of which some are furnished by the United States and others by Germany. The American article is acknowledged to be superior both in material and make, and might control the market if made in the liter measurements [liter=1.05668 liquid quarts], like the German can.

Stamped goods and enamel ware of every description find large sales in Mexico, and Americans are able to undersell other countries in these lines. Butter churns and other articles for dairy use might be profitably placed on the market.

The better grades of glass tableware are from Europe, principally from Germany; common glassware is secured in the United States. The dealer most prominent in this line in Guadalajara reports that he disposes of a carload of American cheap glassware in about eight months, on an average. France and England furnish the high-grade crockery ware.

In the hardware and dry goods trades the Germans and French, respectively, lead.

American firearms are in demand in this section, with Belgian arms in competition.

German and French manufacturers of hardware and dry goods study the wants of the Mexicans and the conditions of payment that are most convenient for them, with the result that they sell the goods; while the American manufacturer of the same articles, as of some other lines, tries to push his goods in his own way, seemingly regardless of the people with whom he has to deal, and often without success. There is a notable exception in the case of American shoes, which are preferred to those of Spanish and French make and practically control the market. American ready-made clothing for men and soft and stiff hats have a good share of trade in their line.

In the drug and chemical trade of Mexico Germany holds first place, and the products of German laboratories and chemical works are found in every part of the country.

The druggist glassware trade is held by Germany.

Importations from France are principally toilet articles, perfumes, soaps, powders, etc.

SYSTEMS OF PAYMENT AND TRADE METHODS.

The reason for the predominance of German goods in the drug and chemical line is the fact that German houses allow their Mexican customers three to four months credit, while the American houses generally sell at 30 days net, with 2 per cent discount on 10-day payment. The German credit system appeals to the Mexican buyer in that it gives him time not only to receive the goods, but in many in-

stances to sell them before the account falls due. On the other hand, under the American system of billing on short time, it often happens that the bill must be paid long before the goods can arrive, be checked up, and examined. In certain cases it has taken from forty-five to sixty days for goods to arrive shipped from the United States. This delay, though doubtless due to congestion of freight often at Mexican ports, should, in the opinion of Mexican importers, be taken into consideration by the consignor. Care should be taken in invoicing, because when errors occur in the invoice the consignee is fined a treble duty on the goods.

In the drug trade at least the European salesman seems to know the exact cost of the American products, as well as the added cost of the goods laid down in this country, and accordingly, when endeavoring to make sales, meets our prices or undersells us. Notwithstanding these drawbacks American trade is increasing, and there is probability of a more rapid increase in the future, owing to the recent efforts on the part of some American houses more thoroughly and systematically to introduce and push the sales of their products. Patent medicines of all descriptions have a good market in this country if sufficiently advertised.

SUGGESTIONS FOR INCREASING TRADE.

The American exporter in any line who wishes to introduce goods upon the Mexican markets, must remember that transportation facilities are not of the same order in all parts of this country as in the United States. Goods destined for many interior towns must often be carried part of the distance by pack mule, and should therefore be carefully and closely packed, with a view to permit this mode of transportation, if this is requested. European competitors give minute attention to all such requirements, and success in furthering American trade depends, more largely than is realized, upon these small details.

Again, when sending salesmen to Mexico European houses take into consideration the characteristics and habits of the people. To be successful in this country, the salesman should remain upon the ground long enough to enable him to become acquainted with the trade and gain the confidence of the buyer. The Mexican requires some time for the consideration of a proposition, especially a new one, but when once his custom is secured, he proves a good-paying and a steady purchaser. American houses are said to be too prone to become discouraged over small initial orders, and to discontinue sending representatives.

Through its relation to the Southern Pacific Railway extension, as previously mentioned, Guadalajara is likely to interest American capital largely in its undeveloped agricultural, mineral, and timber resources; and with increasing prosperity this already rich section of Mexico will show a much larger purchasing power and a much larger per capita consumption of American manufactures.

CONDITIONS IN SAN LUIS POTOSI.

The State of San Luis Potosi owes its importance both to the large mining resources contained within its boundaries and to the

favorable geographical position which it occupies. The capital, situated on a high plateau, bears the same name and is about equidistant from the Gulf of Mexico and the Pacific Ocean. The city of San Luis Potosi has for a century past been the trading center for the western slope, since before the advent of railroads goods imported through the port of Tampico for western and northern points were transported hither by pack mules for distribution. The city is now a railroad center, with the Mexican National Line leading north and south, the Mexican Central westward to Aguas Calientes, where it joins the main line, and eastward to Tampico and the Gulf of Mexico. This city has a population of approximately 70,000 inhabitants, and commercially ocupies a similar position on the eastern slope to that held by Guadalajara toward the western.

RESOURCES AND INDUSTRIES.

Agriculturally the State can not compete with some others, as there is a lack of rainfall here, and few natural streams, although regions near the Gulf States are fertile and well watered. The cattle-raising interests of the State are of growing importance, and the products of the charcoal industry furnish one source of supply for the Mexico City fuel markets.

The mining riches of San Luis Potosi include sulphate of mercury and zinc, cinnabar, silver, copper, gold, and lead. The principal mining camps are Catorce, Charcas, Guadalcazar, Carro de San Pedro, Bernalejo, and Ramos. I am informed that throughout the State there are approximately 13,000 miners employed.

The capital city is well paved and well kept, and boasts some important commercial houses, having extensive connections with all parts of the Republic. Its industries include smelting, a flour mill, a nail factory, a linen mill, etc. The Mexican National Packing Company has in course of construction a cold-storage plant in this city, as auxiliary to the packing house at Uruapan.

As regards the various products of import and their origin, practically the same conditions, requirements, and sources of supply obtain here as reported from other sections. The demands for mining machinery, agricultural machinery and implements are supplied principally by American manufacturers, with English and German products in competition. The same holds true in the hardware trade. A German firm conducts a well-appointed retail store for stationer's supplies in this and several other cities of the Republic, handling, naturally, most largely goods of German manufacture. There is also a depot where like products of American make may be secured, as well as American books and periodicals.

CLOTHING, BOOTS AND SHOES, ETC., FROM THE UNITED STATES.

There exists a good demand here, as elsewhere throughout the Republic, for American ready-made clothing for both sexes. There is also a good trade in the finest qualities of ready-made infants' wear, as required by Mexican families of the higher class, which is now chiefly supplied by French makers. Another article of women's wearing apparel for which the annual sales are large is the "tapalo," the characteristic native wrap, both headgear and shawl, worn generally by all women and girls throughout Mexico, with the exception

of women belonging to the wealthy class. This shawl, as worn by the lower classes, is known as a "reboso," is made of cotton, and is of domestic manufacture. France is the principal source of supply for the "tapalo," which is always black, made either from wool or silk and wool, woven with a border, and sells ordinarily for from $2 to $25 Mexican.

The boot and shoe trade is very largely supplied by American makers. Our products here, as elsewhere in Mexico, are in good favor, and the same may be said of numerous manufactures found in the various retail stores.

ENGLISH PACKING SAID TO BE BETTER THAN AMERICAN.

The trade in American groceries and foodstuffs in San Luis Potosi is considerable. Goods of English origin are found in competition, and in some instances this competition is very keen; particularly in the biscuit line. I am told that the first cost of English products is less than of American products, the rate of customs duty being the same in each instance; but the British competitor takes more care in packing, and consequently his product is apt to give better satisfaction. English biscuits are packed in hermetically sealed cans and will remain in a fresh condition for a long time.

The sales of California canned fruits are somewhat slow, the high rate of customs duty tending to prohibit any marked increase in the same. Both Spanish and American olives are on the market, a fair proportion of this trade being ours. Breakfast foods are supplied by American houses and, with the exception of oatmeal, their products meet no competition. A certain British firm prepares this food for export, packed in tin cans, with consequent success. Two dairies are now established near San Luis Potosi, and while American-made butter excels the Mexican output, sales of the former have fallen off, owing to the proximity of this new source of supply. American hams and bacon are in good demand, also canned meats and fish, these especially for use in the mining regions of the State.

HENEQUEN SITUATION IN YUCATAN.

The financial depression prevailing among henequen planters, noted some weeks since, has been substantially relieved by the Banco Nacional de Mexico, which recently authorized its branch at Campeche to advance the sum of $2,000,000 Mexican to the henequen growers of that section. The bank will purchase fiber to the above amount, and, as the same is presented, will pay the growers 90 per cent of the market value of the product, as a loan for a term of six months, the notes of the owners bearing 10 per cent interest. The fiber is now being gathered, and the situation bids fair to become much brighter in that section. Recently published statistics state that the exports of henequen from the Port of Progreso for 1907 amounted to 611,845 bales, weighing 100,773,004 kilos (kilo=2¼ pounds), valued at $24,874,317 Mexican. As compared with the exports for the previous year, an increase of 1,200 bales is shown. The above 611,845 bales were divided among the following countries: United States, 552,072; Canada, 44,269; Cuba, 7,787; Europe, 7,710; South America, 7.

VEHICLE AND HARNESS TRADE.

MARKET LARGELY SUPPLIED BY UNITED STATES MANUFACTURERS.

Consul-General Philip C. Hanna, of Monterey, reviews the vehicle and harness trade of Mexico as follows:

In the business of manufacturing carriages, buggies, and other light vehicles a beginning has been made in this Republic, but as yet most of such vehicles used here are imported, the United States having by far the larger part of the trade. A drawback to the manufacture of such vehicles in Mexico is the lack of the proper kind of timber. This timber is secured from the United States, and factories generally find it cheaper to import finished parts from that country, especially the wooden parts, and put them together in their own factories.

Frequently vehicles are brought in unpainted and untrimmed, or "in white," as it is termed in the trade, and painted and trimmed here. The duty on a painted carriage or buggy ranges from 23 to 33 cents (American currency) per kilo (2.2 pounds), while the charge on an unpainted and unfinished vehicle ranges from 6 to 17 cents per kilo. Thus some dealers say they find it profitable to do the painting and finishing of seats and tops here, although the material for these purposes is also generally imported from the United States. Cushions and trimmings ready to put on pay a duty of 15 cents per kilo, as compared with 33 cents paid on the weight of a finished vehicle. Parts of buggies and carriages, such as spokes and felloes, are admitted at rates ranging from 3 to 8 cents per kilo.

The finest victorias used here are mostly imported from France, though some are imported from Germany. The class of French vehicles sold here bring from $1,600 to $2,000 or more. Victorias of equally high grade are made in the United States, but it is said American manufacturers have not been able to compete in price. On the other hand, Germany is now exporting similar vehicles at much lower prices than those made by France, but perhaps lacking in the style and finish of the French makes.

WHERE UNITED STATES PREDOMINATES—HARNESS TRADE.

American light vehicles are favored here because they are well made and adapted to the climate. Recently experiments have been made in Monterey in the manufacture of bodies for buggies and carriages, but it has not been an entire success. Notwithstanding the fact that kiln-dried woods are brought from American factories for this purpose—panels and other thin parts being made here—it is said that they have a tendency to split after they are finished and painted.

In all light carriages and buggies the United States is able to sell cheaper than France or Germany, and a local dealer estimates that 30 such vehicles from the United States are sold here to 1 from Europe. I am informed that all rockaways and similar vehicles used here are of American make.

Farm wagons and the heavier wagons used by miners are brought almost exclusively from the United States. On these the duty ranges from 11 to 28 cents per kilo for the unfinished vehicle, according to weight. The only heavy vehicles manufactured are ox carts, of

which a large number are used here. The wood used in the making of the wheels of these carts is imported from the United States.

At the present time most of the harness used in this country is made in Mexico of Mexican leather. The tanning industry has been developed to a point where a good quality of leather for harness making is furnished at home, and the workmanship of the local harness factories satisfies the local demand up to very fine and expensive harness. The latter is imported mostly from France, although Germany and the United States have a share in the trade. These sets of French harness cost from $500 to $1,000, and as might be expected are not in general use. In medium, and even low grades of harness, American manufacturers do considerable business in Monterey, but the local factories dominate the market. [The two principal importers of vehicles and harness at Monterey are listed at the Bureau of Manufactures.]

PORT OF ENTRY AT MAGDALENA BAY.

GOVERNMENT'S ACTION OF GREAT IMPORTANCE TO MERCHANT VESSELS.

Consul-General A. L. M. Gottschalk reports from Mexico City that the Government of Mexico has made Magdalena Bay a regular port of entry, dating from February 15, adding the following details:

The Mexican Government, in view of the movement which is taking place commercially toward Magdalena Bay, decided to make of the Bay, for an indefinite period, a port of entry. This will do away with the necessity which has hitherto existed of merchant vessels with cargoes for Magdalena Bay clearing from American ports for Ensenada and being obliged to transport their cargoes from the latter point to Magdalena Bay as "coastwise cargoes," it having first been required, of course, that the cargoes in question be entered at the Ensenada custom-house and the duties thereon paid at that port.

After February 15 Magdalena Bay will be a Mexican port of entry, under the charge of a skilled and experienced Mexican custom-house officer specially selected by the Mexican treasury department for that service. His title will be "Administrator of the Magdalena Bay Custom-House," and he will be accompanied by a specially selected staff, which will include a competent official speaking the English language fluently. The new collector (administrador) will be Señor D. Rafael Castro Montaño, who will probably also exercise the functions of captain of the port.

CANADA.

PRESENT BUSINESS CONDITIONS.

COMMERCIAL PROSPERITY CHECKED BY UNAVAILABLE CAPITAL.

Consul-General William H. Bradley, of Montreal, furnishes a summarized report on the commerce and banking conditions of Canada for the year 1907. He prefaces his review with the following newspaper statement:

The trade of Canada has outstripped the capital available for its conduct. Bank discounts of commercial paper have mounted up till they equal public deposits, and a halt to further expansion has been called. Floating capital

has been converted into fixed capital during the last five or six years the world over. Prices of all commodities have steadily risen, not least the price of labor. Extravagance has marked the way of living. The waste of wars within the decade has been great. An enormous expansion of credit has taken place, and when capital, the basis of sound credit, began to run short a sharp collapse followed.

With the year 1907 the climax of an era of great growth in all directions was reached in this province and in the Dominion. Ten years ago the population was 5,370,000; to-day a careful estimate places it at 6,600,000, a gain of 23 per cent. Foreign trade has advanced from $234,926,000 to $571,783,000 in the same period.

Since 1897 the public deposits in banks—chartered, government, and savings—have risen from $270,000,000 to $667,400,000. One point in the banking situation is worthy of note: In 1906 the operations of Canadian banks on the basis of total assets were enlarged $124,500,000, while in 1907 the enlargement was only $18,800,000. The rate of expansion was slowing down, as deposits in 1906 rose $72,000,000, while in 1907 the increase was only $15,000,000. There was therefore less to lend. Six years ago bank loans to commercial borrowers were 89.5 per cent of public deposits; to-day the loans amount to about 98.6 per cent of the deposits. Between July 31, 1906, and July 31, 1907, banking capital, reserve, and deposits increased $55,729,000, while in the same period commercial loans increased $80,394,000.

Five years ago the percentage of commercial loans to total assets of banks in Canada is said to have been 52 per cent; in 1906, 57.5 per cent; and in October, 1907, it was 61 per cent. In the past three years the balance due Canadian banks by foreign agents has been reduced from $21,140,300 in 1905, and $17,836,700 in 1906, to $6,639,400 in October, 1907. The aggregate bank clearings at Montreal for the first ten months of 1905 were $1,078,000,000; of 1906, $1,246,815,000; and of 1907, $1,289,046,000. Throughout the Dominion clearing increased 9.4 per cent during the ten months of 1907.

IMPORTS AND EXPORTS—AMERICAN BRANCH CONCERNS.

The imports into and exports from Canada during the past five years were as follows:

Year.	Imports.	Exports.	Year.	Imports.	Exports.
1903	$233,790,516	$214,401,674	1907	$345,271,090	$226,512,068
1904	243,586,424	198,414,439			
1905	251,603,000	190,854,946	Total	1,357,514,895	1,065,667,078
1906	283,263,865	235,483,956			

The growth of manufactures during the past few years has been very rapid. In 1901 the value of the output of manufacturing industries in all Canada was $481,053,375; in 1907 it was $717,118,092. In Montreal alone for the year 1901 the value was $84,490,942, which had grown by 1906 to $118,044,675.

A special commissioner, sent over by the British Board of Trade to find means of extending the trade with England, states that 122 of the leading manufacturing firms of the United States have operating branches in Canada, and declares that in Montreal alone $25,000,000 to $75,000,000 American capital is invested.

NORTHWEST RESOURCES.

POSSIBILITIES OF UNDEVELOPED AREA ON THE ARCTIC SLOPE.

Consul A. G. Seyfert writes from Collingwood the following concerning the resources of the northwest of Canada, and more particularly of that portion lying north of the Saskatchewan, which is often referred to as "Canada's fertile northland:"

The Canadian prairie provinces of Manitoba, Saskatchewan, and Alberta have nearly reached the 100,000,000-bushel mark of annual wheat production, and there is also being produced nearly 100,000,000 bushels of other grains annually. The tract of country from which this enormous yield of grain is being produced is practically confined to what has been known in past years as "the fertile belt;" that is, the country south of the North Saskatchewan River. The limit of production in this area is very far from being reached.

The size of the northwest, even that of the fertile belt, is hardly realized by one accustomed to the less extensive fertile areas in eastern Canada. The following is a summary in part of an account in the Toronto Globe by a writer who spent last summer in an exploring expedition in the north:

From Winnipeg to Edmonton is about 800 miles, more than three times the distance from Ottawa to Toronto. It has been stated that the Canadian Northern Railway between these two points, with about 100 stations, will have a grain-shipping station at all but two of the hundred. In this area there are now probably more than 1,000,000 people, and the annual increase by immigration will approximate 150,000.

The size of the region lying north of the Saskatchewan River is still less comprehended. From the international boundary to Edmonton is 312 miles, but from Edmonton to the mouth of the Mackenzie River in an air line is over 1,300 miles, about four times the distance from Toronto to Montreal.

North from Edmonton about 400 miles as one travels by the rivers is Fort Vermilion, on the Peace River, where there is a well-equipped, modern, electric-lighted flour mill. There is undoubted evidence that wheat has been grown about this point for many years successfully. North from here, down the Peace River to the Slave River and thence down the Mackenzie River (which in this part might be navigated by large ocean steamships), is Fort Good Hope, which is just outside the Arctic Circle. At this place 1,200 miles farther north than Winnipeg—excellent potatoes, cabbages, and onions are grown.

From Prince Albert on the North Saskatchewan (which is about 300 miles north of the international boundary) north 150 miles is Lac La Rouge, where there has been a Hudson Bay post and a Church of England mission for many years. Wheat has been grown successfully there for a number of years in succession, as well as all the ordinary garden vegetables. In the country 100 miles north of Lake Winnipeg and the North Saskatchewan, which the proposed railway to Hudson Bay will traverse, there is a great clay belt like that through which the Grand Trunk Pacific runs in New Ontario, estimated to contain at least 10,000 square miles, where all ordinary vegetables and hardier grains can be grown.

MINERAL RESOURCES ARE ABUNDANT.

There are yet other sources of wealth. About eleven years ago there was bored on the Athabaska, 170 miles north of Edmonton, a prospect hole looking for natural gas. The gas came in such force as to stop the operations, and this gas well, the largest known in the world, has been burning continuously ever since. Up and down the Athabaska, above and below this point are remarkable deposits of tar sands, as they are called, which if utilized would furnish paving material in abundance. Moreover there are indisputable evidence of enormous wealth in petroleum, which in oozing out, as it has done through centuries, has caused these strange deposits. In the vicinity of the

tar sands, along the Athabaska, are also extensive deposits of salt, where it can be taken from the surface in great masses, pure white.

Along the bank of the lower Mackenzie for many miles are great areas of burning coal. When the discoverer of this river, Sir Alexander Mackenzie, passed down, about 1789, the same coal was burning, and it has never stopped since.

The country is so large and so little known that no one could say what hidden sources of wealth there may be. In view of the development of Cobalt, which is not very far from the Ottawa Valley, from an unmarked spot in the wilderness seven years ago to the greatest silver-mining district in the world, it is difficult to predict the possibilities of this great unexplored country north of the Saskatchewan. Last winter in Ottawa the statement was made before a committee of the Senate, and by one well qualified to judge, that in the land north of Edmonton, extending down the Peace River, as far as wheat production is possible, there was a tract of country fit for settlement as great as that now settled west of Winnipeg.

ONTARIO HARDWARE TRADE.

PROMINENCE OF AMERICAN GOODS—EXTENT OF COMPETITION.

Consul-General John G. Foster, of Ottawa, forwards a report by Mr. James J. McBride, consular agent at Arnprior, concerning the hardware trade in the latter's district, based on information received from local Canadian firms. Following is a summary:

Of the imported hardware handled here, American goods predominate, followed by English goods. The foreign hardware, other than American, sold by the local merchants in any considerable quantities is: Blacksmiths' hardware from England, cutlery from England and Germany, glass from Belgium and England, guns from Germany, and ammunition from England and Germany. Granite ware of German manufacture is being introduced. From the United States are imported all kinds of shelf hardware, brass fittings, cordage, rifles and ammunition, nickel-plated ware, and builders' hardware. The most active competitors are English and German manufacturers. The former have the advantage of a preferential tariff of from one-fourth to one-third (usually the latter) off the general tariff; and the latter, despite the surtax of one-third of the general tariff, are pushing their goods on the market.

In general, American goods give satisfaction, with the exception of cutlery, which is pronounced of inferior grade. American brass goods, better-class locks, and nickel-plated ware are especially popular. The promptness with which orders are filled and good methods of packing are commended.

Few American houses send representatives over this territory. Trips are usually made only once a year, except in the case of one or two firms. A few English agents, usually selling paints and varnishes, and occasionally a French or German representative, visit this district.

METHODS OF INCREASING TRADE.

Nearly all the firms here expressed the wish to receive catalogues from American manufacturers. The lines most desired are general hardware, brass valves of all kinds, guns, paints, and scales. In this connection it should be noted that the duty has been removed from bona fide trade catalogues and price lists not designed to advertise the sale of goods by any person in Canada, when sent into Canada in single copies addressed to merchants therein, but not for distribution.

To increase their trade, or even to hold that already established, American exporters should deal more directly with the retailers, who understand the local markets. Moreover, the profits of the jobbers mean an increased cost to the consumer and handicap the sale of American goods. To cite an example, one firm informed me that not long since a representative of a jobbing house quoted some American goods which the firm had at the time in stock (imported direct) at a price at which the firm itself would sell these goods in reasonable quantities at a good profit. The large lumbering establishments in this district take considerable quantities of lumbermen's hardware annually, much of which is obtained through the local dealers. [A list of the principal hardware dealers of this district is on file in the Bureau of Manufactures.]

TRADE AND REVENUE.

HEAVY INCREASE IN IMPORTS—GOVERNMENT FISCAL REVIEW.

Consul R. S. Chilton, jr., forwards from Toronto the following newspaper statement giving the foreign trade of Canada for the year 1907:

During the twelve months of 1907 Canada's total trade amounted to $635,840,681, an increase of $45,895,877 as compared with 1906. The total imports were $362,515,267, an increase of $42,048,067, or about 12 per cent. The total exports were $273,325,414, an increase of $3,847,810, or less than 2 per cent.

Of the total increase in imports, $17,448,914 was in imports from Great Britain, $19,121,983 from the United States, $1,281,508 from France, and $984,886 from Germany.

On the other hand, Canadian exports to Great Britain decreased $8,713,849; exports to the United States increased $10,149,547; exports to France decreased $43,920, and exports to Germany increased $375,556.

Canada's total imports during the year from Great Britain were $95,094,488, and the exports to Great Britain were $126,347,931; imports from the United States were $215,245,100, and exports $117,536,998; imports from France were $9,501,052, and exports $1,872,424; imports from Germany were $8,049,884, and exports $1,872,659.

UNITED STATES.

EXPORTS OF MACHINERY—COMPARATIVE TRADE OF THE PAST TWO YEARS.

American manufacturers will be gratified to note the steady increase in the exports of machines and machinery, for it goes to prove that as foreign consumers become convinced of the superior adaptabilities of American machines to the uses for which designed they purchase them in larger quantities.

In the following statement, showing the exports for the calendar years 1906 and 1907, the total values of the several classes are given, and, in most cases, the leading countries to which shipped, which

show that the countries most industrially advanced, even in the manufacture of machines and machinery, are the best customers:

Classes of machines and machinery.	1906.	1907.
Agricultural machines and implements:		
Russia	$4,673,243	$4,853,523
Argentina	4,703,622	3,588,769
France	3,070,043	3,586,222
Germany	1,864,699	2,598.047
British North America	2,917.129	2,515,489
Australasia	1,231,694	1,020.873
United Kingdom	1,036,674	932,727
Other countries	5,247,658	7,001,632
Total	24,744,762	25,597,272
Electric machinery:		
British North America	1,943,983	1,543,450
Mexico	1,049,097	1,551,562
Japan	960,146	1,411,209
United Kingdom	1,219,302	1,131,711
Brazil	530,494	979,730
France	276,750	848,711
Other countries	2,294,981	2,268,837
Total	8,274,753	9,735,230
Metal-working machinery:		
Germany	2,190,042	2,247,886
United Kingdom	1,594,591	2,112,896
France	987,188	1,380,783
Belgium	806,226	1,015,227
Italy	1,023,216	953,634
Other countries	1,312,064	2,432,459
Total	7,913,327	10,142,835

Classes of machines and machinery.	1906.	1907.
Sewing machines:		
United Kingdom	$1,733,089	$1,687,622
Germany	1,051,444	1,156,663
Netherlands	423,166	615,166
Brazil	330,439	541,308
Other countries	4,307,090	4,471,417
Total	7,845,228	8,472,176
Typewriting machines:		
United Kingdom	1,585,189	1,717,011
Germany	988,180	1,161,415
France	453,022	601,594
Mexico	373,152	360,545
British North America	269,044	284,979
Other countries	2,025,657	2,538,620
Total	5,694,244	6,664,164
Miscellaneous machinery:		
Engines and boilers	4,564,248	5,732,650
Locomotives	7,430,277	9,080,337
Laundry	652,231	711,912
Mining	2,837,240	6,125,951
Woodworking	936,288	1,386,381
Windmills	440,691	1,216,235
Printing presses	2,047,773	1,802,456
Pumps and pumping	4,122,703	3,722,847
Shoe	1,470,900	1,219,013
Cash registers	2,664,113	2,477,425
All other	26,360,175	26,698,009
Total miscellaneous	53,526,639	60,173,215
Grand total	107,998,953	120,784,992

WEST INDIES.

COMMERCIAL AND INDUSTRIAL CONDITION OF TURKS ISLANDS.

Consul Joseph A. Howells, reporting on the trade of Turks Islands, West Indies, writes as follows:

The colony for four years, 1903–1907, suffered from a depressed condition of the salt industry, which is the principal source of revenue to the people. The shipments of salt in 1905 amounted to 961,299 bushels, valued at $71,070, against 1,043,474 bushels, worth $69,469 in 1906. The estimated yield in 1907 was 1,800,000 bushels, one of the best seasons for many years, but the large yield was offset by the low price, several cargoes being sold at 4½ cents a bushel on board for coarse salt and 6 cents for ground or "fish" salt.

The average yearly merchandise imports of the colony for the five-year period, 1900–1904 was $143,799; those of 1906 fell to $134,179, while the average annual exports for the five-year period was $136,996, but in 1906 they dropped to $121,414. The exports for 1906 are classified as follows:

Articles.	Value.	Articles.	Value.
Conchs	$2,521	Sponges	$11,767
Salt	69,469	All other articles	1,776
Shells, turtle	8,604		
Sisal fiber	27,277	Total	121,414

TURTLE SHELLS AND CONCHS—SISAL GRASS CULTURE.

The shipments of turtle shells represent an important item in the trade of the colony. The turtle fishers come from Nassau, North Providence, hunt or fish for turtles and only ship a small part of the shells from the local ports, but carry the larger part to their homes, whence they are shipped to London. A law has been proposed requiring a license and designating a closed season until 1910. Conchs, which are to be found in the sea in great quantities, are taken and dried and sold in Hayti and Santo Domingo. Sometimes valuable pearls are found in the conchs and are sold at various prices up to $100.

The cultivation of pita or sisal grass is now of material importance. At present it is only cultivated on the Caicos Islands, some 3,200 acres being utilized for that purpose. In 1907 a large tract of land was leased on Grand Turks which was planted in pita. The plants are growing finely and by the latter part of 1908 cutting of the leaves will begin. All the fiber is shipped to New York.

The colony, with a population in 1901 of 5,350, is conducted on an economical plane. The total expenditures for 1906 was $30,454. There is a surplus invested amounting to $34,339. A direct cable from Halifax connects Bermuda, Turks Islands, and Jamaica. A daily bulletin is furnished by the company at a cost of $583 a year.

The summer of 1907 was marked by a severe drought, which caused considerable suffering, although of much advantage to salt makers. Usually about 25 to 40 inches is the rainfall, and this takes place in the winter months and in May.

BRAZIL.

MARKET FOR IMPORTED GOODS.

OPPORTUNITIES FOR INCREASED TRADE IN AMERICAN PRODUCTS.

Consul-General George E. Anderson, of Rio de Janeiro, furnishes the following information concerning the demands of the Brazilian market and the manner whereby the products and manufactures of the United States may be introduced there in larger volume:

In the line of standard or staple goods competition is too keen for the man away from the field to get any business. To attempt halfway work is to invite loss, and as a rule if business in Brazil can not be gone after on a considerable scale and with a view of securing a permanent foothold in the country, the field had better be left alone.

In numerous lines there is in Brazil a field for the sale of imported goods, and in nearly every line of manufacture the American exporter who secures a market in Brazil can be sure of the permanency of that market, assuming that he can meet competition and that he looks after his trade. At present Brazilian imports show special demands in the way of machinery of all kinds, electrical appliances, building materials, dry goods, office and household furniture, pharmaceutical products and accessories, hardware specialties, modern food products, and similar goods. The demand in all these lines is increasing, the imports of the country in the year closed showing an increase of about 25 per cent over the imports of the year before, with no indication of any halt in the development of the trade.

HOUSEHOLD AND OFFICE FURNITURE.

Heretofore there has been little done in the way of introducing American household or office furniture in Brazil, for several reasons. The shipment of furniture in its full bulk has been so expensive that, after duties are paid, the cost of the article to the consumer is prohibitive, and only fine furniture for special purposes has been imported, and this has been European. American roll-top desks and similar furniture are popular, but under present tariff and freight the cost is all but prohibitive. Since most American furniture manufacturers are now shipping their goods knocked down and in the white, I have no doubt but they will be able to gain a foothold and build up a satisfactory and lasting trade.

There could be a good sale of the higher grades of American iron beds, folding beds, davenports, sofas, lounges, and the like, but the goods will have to be introduced as something practically new to the Brazilian market. In general Brazilians run to light, highly decorated furniture; but that is due more to European models than to anything else. There is opportunity for the sale of gaslight novelties, portable oil stoves and similar goods. Already something is being done in this line, but the trade is not what it might be. In the way of office furniture something is being done in steel filing cabinets, and more can probably be done with a little pushing. All furniture should be made with a view of use in a hot, moist climate. Metal should be used when and where possible.

BUILDING MATERIAL.

In the line of building materials the United States has had little trade outside of the rougher articles. It has sent several million dollars worth of pitch pine annually for a good many years, and has dominated the market in turpentine. In prepared paints its trade has grown but little, even in spite of the preferential tariff favoring American paints. The market is a good one, and could easily be reached by American paint men. The matter of climate also should be considered in the paint trade, heat and moisture and not frost being the elements that are important.

Some American pressed brick have been sold for modern buildings in Rio de Janeiro, and the trade could be greatly increased. American building tiles are being introduced, but the preference so far is for the European article, chiefly because of freight considerations and because European manufacturers have agents on the ground. Nearly all the buildings in Brazilian cities are of stone and brick, solid, with practically no high buildings. It is probable, however, that the construction of two comparatively high buildings in Rio de Janeiro, now in course of erection, will lead to other buildings of this sort.

Nothing in the way of steel shingles seems to be known. I have seen some ceilings on the order of the American steel ceiling, but there has been no general introduction of them. There is a good opportunity in this line. Considerable iron and steel roofing is in use in some parts, but it is almost altogether of the sheet and corrugated order. There would be a good trade in galvanized iron materials if such goods were properly introduced. In the way of bathroom fixtures and plumbing supplies, few American goods are known

and none are pushed. There is a splendid market for such goods. Kitchen sinks and fittings of the American style would also sell readily. Iron and steel beams are coming into use in building to some extent, but Belgium and Germany furnish most of them. American manufacturers have had no representation in Brazil to look after that particular line of business. There ought to be a good trade in iron and steel doors and shutters, fire doors and shutters, vault doors, and all similar goods, and for some forms of American drainage pipe. Water mains and pipes are used in constantly increasing quantities, but most of the goods come from Europe.

FOREIGN FOOD PRODUCTS.

American flour, lard, and bacon are again on the increase. Little is done in the way of tinned American meats, hams, and other products, because of the excessively high tariff duties. The United States has been sending a large quantity of codfish to Brazil annually for a good many years, but the Canadians are cutting into the trade, simply because American exporters have not paid proper attention to the requirements of the market. The trade in canned fish and canned fruits is small, because of the duties. Canned vegetables in the market are mostly from Europe, and are confined to two or three articles for the fine trade. Dried fruits are very high in price, but there is no reason why Americans should not have most of the trade, except that their European competitors have better steamship connections and can furnish goods more promptly and in better condition. With proper steamship service and cold storage American fruit men could supply Brazil with green fruit in what would be the best season in Brazil and the season of greatest plenty and least expense in the United States.

The demand for cotton-seed oil and its products is not fully supplied by the local cotton industries, and the use of American oil is constantly increasing. American common wines could unquestionably find a market here.

All food products for Brazil must meet the ever-present requirements of the hot, damp climate. Thorough packing and careful protection from climatic influence are not only the better policies in all cases, but in many cases are imperative.

DRUGGISTS' SUPPLIES—INDUSTRIAL MACHINERY AND HARDWARE.

Very few American pharmaceutical products are imported into Brazil, but there is no reason why this should be the case. There is an especially good field for tablet medicines. American patent medicines are commencing to do a good business, in some cases, although the number of remedies on the market is not large. Several lines of what may be called "medical foods" have a good sale, and many others could be introduced to advantage, such as malt extracts, condensed special foods, druggist sundries, toilet specialties, and similar goods. In standard drugs Germany and France seem to have the field, mainly because of their more intelligent development of the market. In dental supply goods, and in some articles among surgical instruments, American manufacturers have the lead and can maintain it with proper care. Enameled surgical ware is coming more and more into use, and the American products in this line ought to find

favor. The list of goods of this class which would find favor with reasonable efforts to sell them in Brazil might be prolonged indefinitely.

In industrial machinery and hardware the imports from the United States have fluctuated in a way to demonstrate a total lack of care on the part of American exporters and of appreciation of the possibilities of the trade. There would be a first-class business in American cutlery if the trade were looked after. American kitchen ware is so much in favor that bids for supplies of such ware for municipal workmen's tenements were asked of American houses. Household ware of all sorts, such as metal washtubs, wringers, buckets, screens, small locks, and novelties, can be sold. The demand for American saws and tools of all kinds is already satisfactory where a reasonable start has been made. Articles like awning frames and appliances, metal signs, wire goods of all sorts, and even iron tanks can be sold, with an intelligent canvassing of the field.

There is a chance for the sale of machines for small plants of many sorts, like biscuit-making machines, laundry machinery, and wood-working machines of many kinds. The demand for engines is light, and, as electricity from water power is likely to be far cheaper in the near future than imported fuel, it is likely that the demand for power machinery will be confined almost entirely to electrical machines and water-power motors. There is a splendid field for water wheels, turbines, etc., all over South America. The industrial life of South America in the future is to center almost entirely about the development of its water power and the transmission of this power from falls to cities through electrical appliances. The sale of electrical appliances of all sorts ought to be pushed in Brazil immediately. The inauguration of electric-lighting services in a number of Brazilian cities within the past few months is soon to lead to an immensely increased demand for electrical specialties, lighting goods, small power plants, and everything of the sort.

There is also a splendid outlook for sawmill plants and all parts and appliances connected therewith, for water-power plants to be used with them, and for lumbering machinery and implements generally. In small industrial railway plants American manufacturers have a good share of the trade. In other industrial conveniences Brazil has been very backward. The use of wheelbarrows, for instance, is not yet common.

MISCELLANEOUS GOODS.

American paper and paper products ought to be more generally used. Pasteboard boxes and similar goods are being used more and more, and the prices obtained are such that native industries, which work upon a basis so costly that their existence would be impossible in almost any other country, are being developed. Articles such as stencils, pencils, pens, stationery supplies, etc., are in demand, and the United States sends a good many supplies of that sort. American school supplies are growing more and more popular, and many of the States of the interior are fitting up their model schools with American school furniture and appliances. Fireworks and firecrackers come from the United States or through the United States. Paper balloons and paper decorative novelties, calendars, lithographs, cheap pictures framed and unframed, are in good demand, coming mostly from Europe.

Jewelry is mostly of the French patterns and is widely used in Brazil. High-grade jewelry, diamonds, pearls, and semiprecious stones are handled in large volume. Standard mountings for jewelry are unduly expensive, as a result of the work being done largely in small establishments, and with unusually high-priced labor. Some of our manufacturing jewelers can secure a good trade in several of the Brazilian cities in their standard goods. Silver and plated ware is in good demand, and American exporters seem to have an increasing share in the business. Customs duties favor solid silverware and light-weight ware, and American exporters have not secured the trade they should in this line because of a lack of understanding of these points.

THE DRY-GOODS TRADE.

Aside from cheap cotton piece goods manufactured in the country everything worn by Brazilians of all classes is imported. There are a number of small articles in the American dry-goods trade which could be sold to advantage in Brazil, in spite of the decline of our piece-goods trade. A large number of notions could be introduced. Suspenders, garters, and other goods containing rubber are used comparatively little in many parts of Europe, and hence Brazilians also are not accustomed to them. Some American specialties in such goods could be profitably introduced.

In regard to millinery it should be remembered that in the days of the Empire the upper class wore hats, while the lower class was distinguished by the women wearing no hats, and this state of things may be said to be largely the case at present. There are many thousands of women in Brazil who have never worn a lady's hat of any kind. These class distinctions are gradually disappearing, and while the use of hats by the women of the middle class is not general as yet, it is becoming more and more so, and there is gradually being developed a demand for a cheap grade of hats, which American manufacturers are in a position to meet as well, if not better, than those of any other country. There is also probably a good trade in cheap ready-made clothing for women of this same class. These two lines of trade merit the immediate investigation of American manufacturers. American makers of knit cotton underwear ought to be selling more goods in Brazil than they are now selling.

The sale of curtains and similar goods is confined almost exclusively to those of light weight, the tariff being assessed upon the weight, rather than upon the quality or value of the article. The same rule applies to carpets, both wool and cotton. There are unquestionably many classes of fabrics and cotton and silk manufactures which American manufacturers could present to the public in Brazil with confidence and success. The loss of so much of the market in cotton goods is due to no other reason than inattention to the market.

MACHINERY NEEDS.

OPPORTUNITY FOR SALE OF PUMPS AND WELL-DRILLING EQUIPMENT.

Deputy-Consul-General Joseph J. Slechta, of Rio de Janeiro, writes that while the Brazilian demand for pumps and well-drilling machinery is as yet only a latent one, some facts recently called to his attention indicate that with very little effort this demand might be

made to assume considerable importance. He therefore gives the following trade suggestions:

It will be of little avail to simply establish agencies in the larger Brazilian cities and expect a successful business to result. There are vast areas, well populated, within easy reach of rail and water transportation, where there is a great dearth of water supply for no other reason than that the inhabitants are actually unfamiliar with the principle involved in digging an ordinary well. The American geologist, John C. Branner, who has just completed a careful survey of a section of territory in the State of Bahia equal in extent to the State of Indiana, is authority for the statement that in that entire region there is frequently great suffering and destitution as a result of a scarcity of water, although an abundant supply would be available through the simple process of digging or boring a well.

Practically the whole of this section of the State, as well as other even more extensive districts, is essentially a stock country, and where running water is not available the inhabitants provide water for their cattle by digging a large rectangular hole, deep enough to tap a water supply. This hole is intended to serve as a sort of reservoir, being perhaps 12 by 16 feet in size and having on one side a gradual approach by which cattle may descend to drink from the pool formed at the bottom. The water of course becomes so bad that after a time only the most terrible thirst will induce cattle to drink it.

A progressive pump manufacturer who would send out a representative to work with local agents and instruct the inhabitants of this and many similar regions in Brazil in the simple process of sinking a drive-point well would be considered a wonder worker and would reap his reward in a good business. There are many more progressive districts of interior Brazil where a practical demonstrator with well-drilling machinery could create a most important demand for such appliances.

Modern progress and conditions will soon begin to supplant the three centuries old conservatism of millions of the inhabitants of interior Brazil and the earliest on the field with the means to hasten this awakening will profit most and will deserve success.

PERU.

COMMERCIAL OPPORTUNITIES.

DEVELOPMENT OF SOUTHERN TERRITORY OPENS UP AVENUES OF TRADE.

Special Agent Charles M. Pepper, writing from Arequipa, under date of January 20, furnishes in detail an interesting report on the importance of southern Peru as a commercial and industrial trade territory. He also reviews the opportunity for extending commerce in that country. His report reads:

Southern Peruvian markets are included in the zone that is bisected by the Southern Railway which runs from the port of Mollendo to Puno on Lake Titicaca, a distance of 330 miles with a branch line from Juliaca, 30 miles this side of Puno, to Sicuani and Checcacupe. The latter place is 150 miles from Juliaca and is the starting point of the Cuzco division, 70 miles in length, work on which has just begun. Ilo, a small port 80 miles below Mollendo, serves a limited local dis-

trict without distracting from the commerce of Mollendo. Since the bulk of the importations for Bolivia also pass through the latter port it is second in importance only to Callao, and its Peruvian commerce alone would give it this rank independent of the Bolivian traffic.

POOR HARBOR FACILITIES.

There is no natural harbor, and recently a good deal of money has been wasted by bad engineering plans in attempting to provide an artificial one, but these mistakes have been corrected, and a breakwater is now under construction which promises to render serviceable the natural causeway that exists and to provide enlarged port facilities, including warehouse and railway yards. At the present time railway material and general merchandise are piled over several acres of space in the open at Mollendo, awaiting shipment over the Southern Railway, whose facilities proved inadequate for the freight that was turned over to it when the new era of railroad construction began two years ago. Lately some progress has been made in relieving the congestion, and the betterments of the railway, including new bridges, heavy enough for the locomotives that were ordered two years ago, give promise of further improvement. Meanwhile these hundreds of tons of freight piled up at Mollendo serve to give an excellent idea of the nature and the extent of the commerce of southern Peru.

The center of this commerce is the city of Arequipa, situated in the valley of the Chili River, a little more than 100 miles from the coast and with a population of 35,000. The products are agricultural and the local market is not in itself an extensive one, as production is limited to the Chili, the Tambo, the Vitor, and other narrow valleys. These valleys are very fertile; their area, however, being limited, the aggregate production is not large, and the number of inhabitants is small. Some sections are entirely uncultivated and unpeopled. The sandy pampa between the coast and the interior sustains no permanent population and can sustain none until irrigation makes it productive.

AREQUIPA A DISTRIBUTING CENTER.

Arequipa's commercial importance comes from its position as a distributing center, both for exports and imports. It is the headquarters for a number of strong commercial houses that are in close touch with both the United States and Europe, most of which combine both export and import business. Some of these firms have their headquarters in Lima, but others conduct all their foreign business directly with their European or American principals.

There are a number of local industries, including a cotton mill, woolen mills, flour mills, brewery, and soap factories, whose machinery is bought abroad. The most important of these industries is the cotton mill located at Huacho, a few miles out of the city, which produces the coarse cloth known as "tocuyo." This does not, however, fully supply the domestic demand. The export trade centered in Arequipa is based on the products of the mines and the distant rubber forests, the cocoa-palm leaf product, which is the basis of cocaine and its alkaloids, and wools and hides. The gold bullion from the Santo Domingo mines is shipped to Lima and minted there. The silver and copper ores go to the United States or Europe, according to the condition of the market, though for some time past most

of these shipments have been to Europe. Fine alpaca wools are exported to the United States, but the ordinary grades of wool are marketed in England and Germany. The very fine vicuna wool is taken by France. Hides are sent to England. The rubber product is divided between the United States and Europe, the shipments usually favoring the United States.

IMPROVED TRANSPORTATION FACILITIES.

While Arequipa derives some importance from its export trade, its chief consequence comes from the import commerce which it controls. It is the center of supply, not only for the agricultural and mining districts which lie between the Pacific coast and the Lake Titicaca district, but also for the rubber country of the Madre de Dios and Beni rivers. In former years small quantities of supplies were packed in over the difficult trails by which the rubber was brought out, but with the means of transportation so limited the total volume remained very small. American enterprise somewhat unexpectedly shared the possibilities of this trade, which is yet in its infancy. The Inca Mining Company, after building a wagon road from the railway station at Tiripata to the Santo Domingo gold mines, received a liberal land grant from the Peruvian Government and undertook to continue the roads through the forest or rubber regions to navigable waters. An extensive system of wagon roads was begun five years ago, and while it is not yet completed, transportation facilities already have been provided for large districts, and a direct road opened to a navigable point on the Tambopata River, which is the chief tributary of the Madre de Dios. The company has placed a 150-ton steel frame stern-wheel steamer of the Mississippi River type, made in Chicago, on the Tambopata, and the traffic already developed has been surprising. It indicates great possibilities.

FINANCIAL AID FROM EUROPE.

Various companies holding rubber concessions from the Peruvian Government have been financed in Europe during the last two years. Probably the majority of them will have no better fortune than previous companies, but some of the recent ones appear to have sufficient capital to insure their success, and if they do succeed this means a further opening up of markets in this region, because in making the land grants the Peruvian Government has stipulated that roads shall be built as was done in the case of the Inca Company. But whether the new projects are successful or not the way has been provided for reaching a large body of consumers.

I am informed by those engaged in the trade that the "caucheros," who constitute the rubber camps of the Tambopata and the Madre de Dios districts, have proved very liberal buyers. Even at present prices the business of rubber gathering is profitable and the "caucheros" are able to continue their purchases. Their demand is for articles of good quality. Naturally, provisions of all kinds are most in demand, for bananas are about the only food product grown in the rubber regions, though later rice will be cultivated in some of the adjacent districts.

Chicago packing-house products early established themselves in favor, and they maintain their position. Canned goods, vegetables and fruits, relishes, and similar articles have a steady sale. California

supplies a portion of the canned fruits, and most of the other canned goods are obtained from the Atlantic coast. There is a considerable importation of crackers and soda biscuits in tins. Textiles, particularly cottons, are bought in large quantities, but the United States has little share in supplying them, Manchester controlling this trade.

Aside from the new markets which have been opened in the rubber country and which promise further growth, the nearer districts, for which Arequipa is the distributing center, consume the customary variety of staple articles. Most of the railway material for the extension of the Juliaca branch line from Checcacupe to Cuzco is on the ground or has been contracted for, though later there will be need of additional rolling stock. The railway-construction camps are established and they add to the demand for general merchandise.

MINING DEVELOPMENT—OIL-DRILLING MACHINERY.

While some new mines are being prospected and old ones developed on a larger scale, the activity in the mining industry at this time is not marked enough to indicate large purchases of machinery. The most energy shown is in prospecting the placer deposits of the Province of Sandio, in the Poto district, with a view to the introduction of dredges following the use of traction drills which were brought from the United States to determine the value of the gravels. Some of the machinery used in the mines of southern Peru has been contracted for through local firms, but most of it is bought directly in the United States by the representatives of the mining companies, several of which have their head offices there.

A large quantity of oil-drilling machinery has been imported from the United States by the American company which is developing the Lake Titicaca fields. The existence of oil in paying quantities having been satisfactorily determined, the company is now seeking to create a general demand for petroleum as fuel, the high cost of fuel in both Peru and Bolivia offering encouraging prospects for the introduction of petroleum. Years ago the Southern Railway was provided with oil-burning locomotives, the supply coming from the Tulara fields in northern Peru. The failure of a regular supply from this source and other reasons caused the railway to return to coal, notwithstanding its expense. Now the use of oil for fuel is said to be again under consideration, though the change is not likely to be made soon. In the meantime a more immediate prospect would seem to be the use of petroleum by the steamers on Lake Titicaca. Further importations of oil-drilling machinery from the United States are, of course, dependent on the use of the Puno petroleum for fuel.

Some electrical installations have recently been made in southern Peru. One contract was secured by the London branch of an American company in competition with other American companies and with the German syndicate. Arequipa has a local electrical company which provides lights to the public street and private dwellings. The tramway system, which includes both passenger and freight traffic, is still operated by mule power.

OPPORTUNITY FOR EXTENDING AMERICAN SALES.

It is the opinion of a number of dealers with whom I have talked that in the districts which are served by Arequipa, a larger use may be found for some classes of American agricultural implements,

though they do not hold out the prospect of extensive sales in the early future. Several firms in Arequipa keep American farm tools in stock, but no special effort is made to exhibit them. The products of the various valleys are semitropical, but cereals, alfalfa and hay are also raised.

Some of the owners of the large estates are quite progressive and have the latest improved farm machinery so far as it is suitable to the requirements of their land. Mowers and reapers are employed for the alfalfa and hay crops, but there is not a wide field for steam thrashers or steam plows. Not much of an attempt has been made to introduce the disk plow, but there is a good demand for ordinary plows, and this can be stimulated if the manufacturers' agents take pains to provide the means of demonstrating the way to use these implements.

The chacras, or farms, as a rule are small; generally the ground is hilly, and bullocks are employed instead of horses. Notwithstanding the usual talk about the preference of the cholos, or peons, for the pronged stick or wooden beam plow, I noticed in the farming districts around Arequipa a fair number of modern plows, particularly single-handle ones, and I am assured that this is true of other districts also. Where they have been introduced it has been done by the local dealers demonstrating their utility and the methods of using them.

In textiles and clothing of all kinds, Arequipa hardly can be said to be a distributing point for American goods, because so few textiles are imported from the United States for distribution. This trade is divided between England and Germany. Though the Peruvian cotton mills are now turning out bleached goods in addition to the coarse "tocuyo" cloths, this does not seem to have affected the Manchester trade. American boots and shoes are also less in evidence than in other parts of Peru, though some are shipped to the mines and to the railway construction and the rubber camps. The local boot and shoemaking industry appears to be an active one, but some of the American factories which have established a market in Lima might use that as a basis for getting a foothold in Arequipa.

RÉSUMÉ OF BUSINESS CONDITIONS.

Some general information regarding the markets of southern Peru and Arequipa as a trade center may be summed up as follows:

The majority of the leading houses are controlled by the Germans, and the increase of German commercial influence during the last two years has been so notable as to wake the conservative old English houses, of which there are several strong ones, out of their lethargy. The Kosmos steamship line, with its direct service from Hamburg to Mollendo, has helped to maintain a close trade connection.

The recent opening of a branch of the Banco Aleman Transatlantico was a recognition of the importance of the German commerce, which has been a gradual growth, and not a spurt of enterprise. The Italian colony is important, chiefly in retail trade. A number of Syrians and Armenians have built up a good business in Arequipa, and, in spite of opposition, they are spreading through the interior, but their trade is also of a retail character.

The American interests in Arequipa are not predominant in the local trade, but they are of decided consequence in that they represent the most important development enterprises of southern Peru, both in mining and in the new commerce of the rubber country. Their

predominance in mining and similar enterprises assures American supremacy in supplying machinery. But in view of the large investments of capital from the United States and of the development due to it, there is a question whether a full share of the general trade is obtained.

INFORMATION FOR AMERICAN MANUFACTURERS.

For the information of American manufacturers I forward a list of the leading houses with some other details regarding the business conducted and the lines of goods handled by them. [Names of business firms filed for reference at the Bureau of Manufactures.] In connection with this list the wide application of the term "general merchandise" should be understood. Special lines are the exception rather than the rule, and in most cases general merchandise includes machinery, hardware, dry goods, and other textiles, groceries and provisions, canned goods and even druggists' sundries. A single order from a local house or a merchant in the remote interior will include a score of diverse articles and for that reason the importing houses find it necessary to carry so miscellaneous a stock.

Goods are received both by way of the Straits of Magellan and via Panama, Mollendo being 1,900 miles from the isthmus. Heavy machinery and railway material are usually shipped through the straits because transshipment is avoided, yet there has been an increase of this class of traffic via Panama.

The Merchants' Line is the direct one from New York through the straits. The Lamport and Holt Line dispatches occasional vessels from the English ports and the Kosmos maintains a regular service from the German ports. Some shipments of American agricultural machinery have been made from New York to Hamburg or Bremen and then transshipment, the claim being that a better rate was obtained than could be had either via Panama or direct from New York through Magellan Strait.

In the present demoralized condition of the steamship companies which control the west coast traffic between Panama and Valparaiso, thirty days have to be allowed for mail between Arequipa and New York. An efficient steamship service would provide it in less than twenty days.

CHILE.

OPPORTUNITIES IN IQUIQUE.

GENERAL CONDITIONS FOR SELLING GOODS IN NORTHERN CHILE.

Consul Rea Hanna writes from Iquique, regarding the outlook for the increase of American trade in northern Chile, as follows:

The present seems to be an opportune time for the successful introduction of American goods. Agents of American exporting houses report that with very little effort they can place satisfactory orders, providing that terms similar to those offered by British and German firms are given.

The American manufacturers have been able to dispose of their wares in the States, and consequently have made very little effort to obtain orders from this region. In fact, I was told by a local American merchant that one of the large houses in New York told him that they would not take the trouble to fill his orders, as they could dispose of their products at home. This attitude may be all right for

the present, but with the opening of the Panama Canal the west coast of South America will be a near-by field for American enterprise, and if an early start is not made to actively enter this market it may soon be too late. The merchants here will have established European connections of long standing; and habit has a strong influence on the placing of orders, particularly when relations have been satisfactory.

LOCAL MARKET REQUIREMENTS.

The British, German, and French firms pay a great deal of attention to export packing, and their goods seldom arrive in poor condition. The subject of packing is at present receiving much more attention than formerly from American shippers. It is very important, as there is hardly a harbor on this coast where freight does not have to be handled in lighters, and quite often in rough water.

The local importers are accustomed to obtaining credit from 90 days to 6 months after the receipt of goods. This would seem to be a condition of affairs which could be regulated by personal conference.

A representative not thoroughly familiar with the Spanish language can do little here, and he must be a capable man to be able to adapt himself to local conditions.

One of the most serious drawbacks to American trade in this country is the absence of banks clearing directly with New York. As an example, when the buying value of a Chilean paper peso, on London, was 11 pence, or 22 cents American gold, an additional 1½ pence was added for buying exchange on New York, making the value 25 cents, or nearly 14 per cent additional. When asked the reason for such a difference, the explanation was that they had to clear through London. This is one of the worst instances I have heard, but merchants are continually required to pay exorbitant rates on New York over the London quotations.

The chief product of this district is nitrate of soda. As many millions of dollars' worth of this is shipped to the United States, it certainly would appear that there is a good chance for American imports into Chile to balance the enormous debit which is thus created.

Of course local conditions can not be changed so as to be more advantageous to American trade without intelligent and concerted effort on the part of American exporters, but it is certain that just as soon as proper measures are taken the market will be found in a receptive condition for American merchandise.

IMPORTS OF COQUIMBO.

INFORMATION AS TO TRADE AT PORT OF NORTHERN CHILE.

Consul Alfred A. Winslow, of Valparaiso, in forwarding a report from Acting Consular Agent A. Baird Kerr, at Coquimbo, states that the development of that part of Chile seems to be rather in advance of most other portions of the country, and offers a good field for American goods. Mr. Kerr's report follows:

The imports of hardware are very numerous, as a great trade is done from this port with the north of Chile. Most of the goods are British and German, but principally British. Here, it is needless to say, there is ample room to establish a large trade with the United States. Visits are constantly made by British and German com-

mercial travelers, which helps them to maintain their trade. American commercial travelers are very seldom seen. The goods imported are not confined solely to the cheap articles, but to a general variety.

The importations of glassware are principally of German make. A very large trade is done in this line, as the northern ports are also supplied from here.

Canned goods are principally supplied by Great Britain and France, although a large quantity of American goods is seen, mainly fruits, vegetables, and fish. Meats are not now imported, but a large business is done in lard, sausages, hams, fruits, and jams, which are almost wholly imported from Great Britain.

Dry goods are British and German, and only the cheapest of articles are required.

In lumber the United States can be said to have a monopoly of the trade, but a great deal of native lumber is supplied from the southern portion of Chile.

There is a large business done in farmer's and distiller's machinery.

There is certainly a large opening for American business, and, considering the fact that Chile is within easy reach, commercial travelers should be forthcoming. Freights are cheaper than they are from Europe, and this gives an advantage to American goods. The general custom with European manufacturers is to draw for value of invoice at 90 days' sight on receipt of goods, payable at the 90 days' sight rate for bills on London, and if American manufacturers adopted this system they should do good business down this coast. Some Italian and French firms draw at six months from date of invoice, payable with 90-day sight bills.

[Coquimbo importers of the various articles mentioned in the foregoing report are placed on record at the Bureau of Manufactures.]

DEMAND FOR PLUMBER'S SUPPLIES.

ADDITIONAL CITIES ARE PUTTING IN WATER AND SEWERAGE SYSTEMS.

In order to answer several inquiries relative to plumber's supplies and plumbing Consul Winslow reports that increased attention is being given the question of sanitation throughout Chile. Consul Winslow writes:

The National Government has taken an interest and has directed that a large number of the cities put in complete water and sewerage systems. This means a greatly increased demand for all plumber's supplies. Heretofore the demand for this class of goods has been limited to Valparaiso and Santiago, while from now on it will be much more general and the demand should soon be doubled. The Chilean people are, in the main, progressive and quick to grasp improvements that can be brought within their reach.

So far the United States has been supplying only a comparatively small part of this business, when the trade should really be ours. Where American-made goods are in use they are well received, but the trade has not been thoroughly worked. The United States supplied in 1906 only about 3 per cent of the lead pipe imported, which in all amounted to $24,577 United States currency, while of the bath supplies we furnished about 51 per cent of the $21,180 imported.

The other accessories of the plumbing business largely came from Europe, England taking the lead in such articles as brass tubing, valves, faucets, etc.

There is a good opening here for increased business in this line, and a list is forwarded of parties with whom it might be well for those interested to correspond. [The names may be obtained by business firms from the Bureau of Manufactures.]

GERMANY.

TRADE WITH UNITED STATES.

COMPARATIVE STATISTICS OF IMPORTS AND EXPORTS.

The importations into the United States from Germany during the calendar year 1907 increased more than ten million dollars over the previous twelve months, while the exports to Germany advanced more than thirty million dollars in the same period. The heavy advance in shipments to Germany was mostly in raw cotton, which was twenty-two million dollars greater than in 1906, and forty-one million dollars greater than in 1905. The German textile manufacturing industry has been making rapid progress, and the vast increase in the number of spindles and looms in the Empire demands a proportionately heavier supply of raw material, which only the United States is in position to adequately supply. This German textile prosperity during the past year was reflected in the greater sales of fabrics to foreign countries, shipments to the United States alone having advanced several million dollars.

Germany's purchases of American corn dropped from $12,164,347 in 1905 to $8,608,101 in 1907, but her takings of American wheat advanced from $2,200,452 to $11,750,242, and of American flour from $646,782 to $2,917,129. Shipments of copper to Germany also advanced by several million dollars.

AMERICAN MEAT EXPORT RECESSION.

The past year marked a great decline in the sale of American meats in Germany. This affected all items except canned beef. The exports in 1905 reached almost three million dollars, declined one hundred thousand dollars in 1906, and dropped to less than one million dollars in 1907. The following are the figures:

	1905.	1906.	1907.
Meats:			
Bacon	$1,298,468	$890,872	$106,787
Beef, salted or cured	1,018,587	1,140,077	302,962
Canned beef	100,736	210,898	234,820
Hams	90,265	84,650	9,650
Pork, salted	436,176	519,314	252,571
Total	2,944,232	2,845,811	906,790
Alimentary fats:			
Lard	18,366,015	17,600,508	15,202,721
Lard compounds	376,941	312,345	272,337
Oleo and oleomargarine	2,573,307	3,406,125	3,783,488
Butter	4,975	7,867	458
Tallow	346,113	523,887	614,347
Total	21,667,351	21,880,732	19,873,351
Grand total	24,611,583	24,726,543	20,780,141

AMERICAN MANUFACTURES IN GERMANY.

The total exports from the United States to Germany last year aggregated $274,371,365, the bulk of which was raw materials. The principal articles of American manufacture sold to the Empire, aside from foodstuffs which underwent processes of preparation for market, compared to the two previous years, were as follows:

	1905.	1906.	1907.
Agricultural implements	$1,474,145	$1,864,699	$2,598,047
Builders' hardware	772,381	959,091	1,083,588
Electrical machinery	115,902	101,192	98,389
Metal-working machinery	1,298,010	2,190,042	2,247,836
Sewing machines	1,021,873	1,051,444	1,156,663
Typewriting machines	882,145	988,180	1,161,415
Leather:			
Splits, sole, etc	1,322,123	1,799,140	1,151,461
Boots and shoes	393,357	378,368	603,345
Furniture	126,865	164,285	142,197
Total	7,406,801	9,491,441	10,242,891

IMPORTS OF GERMAN MANUFACTURES.

The imports of the United States from Germany last year reached a total of $161,117,970, consisting mostly of manufactured goods. Raw rubber from Hamburg figures at about three million dollars annually, potash fertilizer at a little more, and undressed furs average four million dollars annually, these constituting the largest lines of raw materials furnished by Germany to the United States. The leading articles of German manufactured wares sold in this country during the past three years are shown as follows:

	1905.	1906.	1907.
Cotton goods:			
Cloths	$543,376	$578,481	$588,703
Knit goods	5,945,807	7,267,617	8,384,830
Laces and embroideries	5,438,882	5,975,154	5,341,332
Silk goods	5,596,084	6,681,667	8,823,866
Wool dress goods	1,628,391	2,156,304	2,759,458
Wool cloths	1,338,422	1,844,488	1,769,493
Linens, etc	2,068,767	2,251,100	2,326,220
Gloves	2,024,215	3,407,565	3,850,030
Coal-tar colors and dyes	4,446,324	4,541,101	4,796,228
Furs, manufactured[a]	3,762,276	3,799,301	3,674,175
Earthen and china ware	5,042,605	5,135,913	5,585,580
Toys	5,011,465	5,949,411	7,112,891
Wines	1,359,812	1,480,794	1,448,340
Total	44,206,426	50,978,896	56,461,146

[a] Not including undressed furs.

FOREIGN TRADE REVIEW.

LAST YEAR MAKES A NEW HIGH RECORD—IRON PRODUCTS.

Consul-General Richard Guenther, of Frankfort, sends the following brief summary of the foreign trade of Germany in 1907:

The imports amounted to 66,008,671 tons, representing a money value of $2,108,500,000, whereas goods exported from Germany weighed 44,966,973 tons and were worth $1,694,700,000. The imports show an increase of $424,800,000 and the exports of $152,800,000 as compared with those for the year 1906. The total foreign trade of Germany for last year reached nearly $3,800,000,000, and is the

largest in the history of the country. It should be remembered, however, that the great increase in its money value is largely owing to the great advance in the price of both imported raw materials and exported manufactures.

According to the published statement of the Association of German Iron and Steel Industries, during 1907 there were produced in Germany 13,045,760 metric tons (metric ton=2,204.6 pounds) of pig iron, which exceeds the production of the preceding year by 570,693 tons.

Germany's foreign trade in iron and ironware for the year 1907 comprised 3,452,202 tons exported, valued at $178,502,618, and 813,349 tons of $27,496,422 value of imported iron and ironware. Compared with the preceding year the foreign trade in this line shows a net increase of $6,256,546.

PRODUCTION AND IMPORTS AND EXPORTS OF COAL.

The statistical bureau of the Empire publishes the following data about the coal trade in Germany for the calendar year 1907, the table giving the output in metric tons (metric ton=2,204.6 pounds):

Stone coal	143,222,886
Brown coal (lignite)	62,319,802
Coke	21,938,038
Black coal briquettes (pressed lumps)	3,524,017
Brown coal briquettes	12,890,461

Germany's coal and coke production of 1907 increased by about 14,500,000 tons over that of the preceding year, but the output of brown coal was less by 1,610,000 tons.

In 1907 Germany imported 13,720,296 tons of black coal (nearly all from England), also 8,963,103 tons of brown coal (from Austria), 584,221 tons of coke, and 195,404 tons of pressed coal blocks. The coal exports of Germany last year consisted of 20,017,688 tons of black coal, most of which went to Austria, Holland, Belgium, Switzerland, and France; 3,790,642 tons of coke, mostly shipped to France and Austria, and 837,775 tons of pressed coal blocks, about half of which were sent to Switzerland.

TRADE WITH ITALY.

STEADY GROWTH, ESPECIALLY IN SALES OF GERMAN GOODS.

Consul Southard P. Warner, of Leipzig, states that Germany's trade with Italy showed an unusual increase during the year 1906, adding that the increase in 1905 was also large. He has compiled the following review covering a decade:

The following table gives the value of Germany's trade (not including the precious metals) with Italy for the five years 1902–1906 and also for 1896:

	1896.	1902.	1903.	1904.	1905.	1906.
Imports	$31,420,000	$44,980,000	$46,620,000	$44,480,000	$50,100,000	$57,360,000
Exports	19,900,000	29,850,000	31,180,000	33,630,000	38,940,000	54,950,000

As will be seen from the statement, Germany's imports from Italy in 1906 show an increase of $7,260,000, or 14.5 per cent over those of 1905. The exports show an increase of 16,010,000, or 41.1 per cent.

During the ten years, 1896–1906, the imports increased $25,940,000, or 83 per cent, and the exports increased $35,050,000, or 176 per cent.

The increase in exports was, therefore, comparatively, twice as great as the increase in imports.

The principal articles of export from Germany to Italy are the various products of the metal, textile, chemical, and leather industries. The large increase in the exports in 1906 was due chiefly to the shipments of machinery and parts thereof, locomotives, locomobiles, bar-iron, and car axles. Woolen goods, tar colors, woolen tops, and hard coal were also important articles of export.

COMMERCIAL INFORMATION BUREAU.

COOPERATIVE ORGANIZATION AMONG EXPORTERS TO PROMOTE TRADE.

Consul-General Richard Guenther, reporting from Frankfort, furnishes the following information regarding another cooperative movement in Germany toward promoting the Empire's foreign trade:

The great commercial associations and combines of Germany have prepared a plan for establishing a Foreign Trade Information Bureau, which, in the manner of the Bureau of Manufactures at Washington, is to answer inquiries concerning export matters and to supply information to German manufacturers, contractors, promoters, etc., so as to extend Germany's trade and interest sphere abroad. It is also intended to establish information agencies at foreign points which are expected to act in connection with the German consulates and the official experts attached thereto. The project as worked out has been submitted to the Imperial Government of Germany, and the Industrial League is charged with carrying it out. Business circles will soon be made acquainted with all details.

ITALY.

INCREASED IMPORTS, DECREASED EXPORTS—SHARE OF UNITED STATES.

Consul James E. Dunning, of Milan, forwards the following report on Italy's foreign trade for the first nine months of 1907, prepared by Clerk Siersdorfer, of his consulate. The report says:

The Milan custom-house supplies the following statement of Italian exports and imports for the first nine months of 1907, compared with the corresponding period of 1906:

Articles.	Imports.		Exports.	
	1907.	1906.	1907.	1906.
Spirits, drinks, and oils	$6,945,951	$5,915,811	$16,918,226	$18,071,102
Tobacco, drugs, and spices	8,943,748	8,327,834	913,637	975,959
Chemicals, medicines, etc	15,821,691	14,217,546	8,973,790	9,863,254
Dyes and tans	5,509,149	5,138,291	906,234	1,299,517
Hemp, flax, jute, etc	7,233,465	6,620,559	8,924,759	9,452,433
Cotton and cotton goods	51,189,603	42,480,523	19,279,313	19,672,062
Wool, horsehair, and fur	20,737,835	18,039,499	4,242,129	4,917,075
Silk and silk goods	27,776,715	26,560,380	86,979,230	100,924,793
Wood and straw	19,002,022	16,585,222	7,863,390	7,135,952
Paper and books	6,468,741	5,266,082	3,543,113	3,126,809
Hides and skins	13,193,073	12,751,248	5,498,946	6,173,826
Minerals, metals, etc	90,767,220	69,755,689	8,441,321	9,451,641
Vehicles	10,820,890	5,093,238	3,478,301	1,855,313
Stoneware, glass, etc	46,361,675	42,904,228	11,669,269	12,727,015
Rubber and gutta-percha	4,054,121	3,980,368	1,083,556	1,298,577
Cereals	40,323,880	48,512,313	34,426,321	27,967,980
Animals and their products	20,639,410	18,898,169	25,571,587	27,059,089
Precious metals and coins	4,981,457	3,586,787	7,353,480	5,763,699
All other goods	22,397,785	10,338,412	759,359	1,167,129
Total	423,168,491	364,981,229	256,825,963	268,909,225

Imports into and exports from Italy for the first nine months of 1907 are reported as follows for six of the most important countries:

Country.	Imports.	Exports.	Country.	Imports.	Exports.
United States	$56,341,332	$31,760,273	Austria	$35,296,033	$20,730,709
Germany	72,564,526	36,614,223	France	32,574,540	26,593,856
Great Britain	71,621,468	21,318,973	Switzerland	9,622,015	43,624,755

TRADE WITH SOUTH AMERICA.

Exports from Italy to South America for the first nine months of 1907 amounted to about 98,036 tons, whereas imports into Italy from that source were about 80,001 tons. Italy's exports to South America consist largely of wines, oils, fruit, medicines, hats, and cotton goods. Woolen goods, silk goods, furniture, books, metals, marble, sulphur, rice, chestnuts and other nuts, preserves, cheese, and sundries also seem to find ready sale in South American markets and are showing a steadily increasing exportation. Nitrate of soda from Chile forms one of Italy's most important importations from South America, 38,053 tons having been imported during the first nine months of 1907. Dyeing and tanning woods, coffee, hides and skins, cereals, raw wool, and fats form the bulk of the other importations from South America.

PURCHASES FROM THE UNITED STATES.

The following table shows Italy's imports from the United States, in weights and values, for the first nine months of 1907, as received by the consulate from official sources:

Articles.	Tons.	Value.	Articles.	Tons.	Value.
Cotton-seed oil	2,813	$325,784	Mineral phosphates	50,457	$486,939
Mineral oils	55,768	2,254,047	Stone and earthen ware, etc	4,515	219,634
Tobacco	9,456	2,245,555	Coal	9,951	53,847
Sulphate of copper	1,171	146,873	Rubber and gutta-percha	30	115,221
Solid paraffin	7,662	916,750	Cereals	169,480	6,082,009
Chemicals, medicines, etc	10,447	523,416	Salted meats and lard	3,595	1,042,393
Raw cotton	123,757	32,065,962	Fish	2,699	442,742
Lumber	104,754	1,888,505	Pork fat	1,298	338,136
Shooks and staves	10,210	409,932	Other fats	3,544	465,130
Hides and leather	216	196,474	Sundries	537	75,849
Raw copper, brass, and bronze	7,894	3,351,831	All other goods	.....	1,328,612
Raw lead	2,154	187,017			
Machines and parts	9,109	438,110	Total	591,854	56,341,332
Scientific instruments	235	771,614			
Automobiles.....number	52	28,950			

SHIPMENTS TO UNITED STATES.

The following table shows Italy's exportations to the United States in values for the first nine months of 1907 as received by the consulate from official sources:

Articles.	Tons.	Value.	Articles.	Tons.	Value.
Wines	6,566	$732,435	Hemp, raw and carded	922	$194,737
Olive oil	8,875	1,802,041	Hemp, linen, and jute manufactures	1,151	334,083
Vegetable extracts	2,544	764,087	Cotton textiles	166	291,044
Calcium citrate	1,882	472,078	Wool and waste	58	28,178
Raw tartar	3,870	672,219	Horsehair	137	137,609
Chemicals, medicines, resin, perfume, etc	20,846	601,774	Raw silk and waste	1,512	11,818,548
Sumac	4,349	163,278	Silk ribbon and textiles	589	727,224

Articles.	Tons.	Value.	Articles.	Tons.	Value.
Other silk goods	61	$70,059	Oranges and lemons	93,299	$1,633,359
Furnitureand woodenware.	1,016	232,758	Dried fruits	2,840	565,876
Straw braid	501	340,066	Preserves	3,952	815,726
Paper and books	471	292,395	Tomatoes in cans	5,373	414,757
Raw hides	681	228,705	Cheese	3,437	1,320,313
Kid gloves and hosiery, pairs	173,000	80,867	Hats, unfinished	171	198,018
			Hats, finished....number..	2,312,600	748,261
Tanned hides and leather goods	4	12,159	Coral	32	148,224
			Sundries	285	29,148
Machines and parts	119	25,669	Art objects	.....	292,202
Automobiles .....number..	39	170,612	All other goods	.....	2,090,383
Marble	49,714	800,950			
Sulphur	4,043	74,691	Total	251,464	31,760,273
Macaroni and flour	31,998	2,405,745			

Of the $31,760,273 worth of exports of Italy to the United States during the first nine months of 1907, a little more than half the total, or $15,998,625, was the value of the declared exports invoiced through the Milan consulate alone. Raw silk, which forms the largest item shipped from Italy to the United States, was, as usual, practically all invoiced through the Milan consulate.

As is shown by the first table of this report, the Italian exports decreased, while all imports, except one (cereals), largely increased. Importations of minerals, metals, etc., and cotton and cotton goods show the most marked increase. Machines form the bulk of the former importations. The increase in the importation of cotton goods is largely due to the limited capacity of Italian cotton mills. It is predicted that the importations of machines and cotton goods will decrease with Italy's future. If Italy's commercial progress continues at the present rate, within a few years the native manufacturers will be equipped to produce this stock themselves.

PORTUGAL.

A DESIRABLE FIELD FOR INCREASING AMERICAN SALES.

Consul-General Louis H. Aymé, of Lisbon, reports that Portugal imports annually more than $30,000,000 worth of merchandise in excess of its exports, which indicates that the country is one eminently desirable for American merchants and manufacturers to work in. He adds:

Intelligent individual effort is absolutely necessary for success. The only way in which business can be secured here is to have a representative on the ground who shall study the needs, fashions, and even fancies of their prospective customers and conform to these. It may be that American patterns, fashions, methods of packing, etc., are the best in the world, but if they are not what the Portuguese want, so far as he is concerned they are the worst in the world. The Portuguese does not want to be told or taught what he should use; he knows just what he wants. He will naturally make his selection from among those who offer him what he wants in the way that he wants it.

AN EXAMPLE OF WRONG METHODS.

This may be made clearer by an example: I lately persuaded an importer here to send an order to the United States for canned goods, hams, jellies, and other preserved foods. The order was very

carefully made up and for each article a specified and well-known brand was indicated. Explicit instructions were given that these directions should be rigidly adhered to. A letter was received acknowledging the order and promising compliance therewith. Later, advice was received that the goods were shipped. After the arrival of the goods here, and after they had been passed through the custom-house and the duties paid, it was discovered that the shipper in New York had in no case followed the orders as to brands, but had purchased all of the goods from a single firm, one not known at all in Portugal, and gave as a reason therefor, in a subsequent letter, that by so doing he had saved considerable time and money to the purchaser. Possibly the goods sent were of as good quality as those ordered, which is doubtful, but even had they been, it would be difficult to persuade the Portuguese purchaser that they were. He is very much disgusted and it would be difficult almost to the point of impossibility to persuade him to repeat the experiment. If this gentleman had ordered from a French house, for example, twelve different brands, let us say, of green peas, in an order of two dozen cans, his order would have been exactly carried out. Americans can not secure trade of Portugal by trying to work off on it at sporadic intervals either inferior goods or surplus stock. To secure this market we must be ready to furnish regularly both as to quantity and quality just what this market desires and on the same as or better terms than it can secure them elsewhere.

SPAIN.

ORGANIZATION OF LARGE CONCERN TO PROMOTE AGRICULTURAL INTERESTS.

Consul-General Benjamin H. Ridgely makes the following report from Barcelona on trade combinations in Spain:

Syndicates have already been formed in the sugar, glass, alcohol, textile, and other national industries. The latest organization relates to agricultural machinery. Under the presidency of King Alfonso XIII, supported by an influential committee comprising ministers of the Crown and many of the largest landowners in Spain, a society has just been formed under the style of the "Sindicato Nacional de Maquinaria Agricola." Its purpose, as its name implies, is to disseminate and foster the use of agricultural machinery in this country, and with this object in view to unite under one controlling management the interests of all those engaged in the manufacture of either agricultural machinery or of those appliances used in preparing agricultural products.

The syndicate will have its headquarters at Madrid, and the capital will for the present be limited to about 1,000,000 pesetas (silver peseta now worth about 17¼ cents). Each firm joining the syndicate will be required to subscribe to a certain number of shares in proportion to the importance and extent of its sales. Preference will naturally be given to native industry, but the syndicate will, whenever necessary or advisable, also purchase foreign agricultural machinery and tools, so that this new enterprise may result indirectly in promoting the sale of American agricultural machinery in Spain.

DENMARK.

MARKET REQUIREMENTS FOR STEREOSCOPIC VIEWS TRADE.

Consul-General Frank R. Mowrer, in a report from Copenhagen, Denmark, says that the opportunities for the sale of stereoscopic views were never as good as at the present time, the general market for which he explains:

The conditions that make these opportunities are the great increase in travel for pleasure and instruction and the development of amateur photography. In a sense this is an age of collectors, of illustrated post cards, postage stamps, prints, varieties of bric-a-brac, rugs, furniture, etc. In the case of stereoscopic views their low price, endless variety, and instructive value can make them peculiarly attractive to collectors if properly brought to their attention.

The form and size of the view is important, and the stimulated interest it gives depends much on the distinctness and clearness of the photograph for perspective and the relative position of objects. Uniformity of size is essential to permit the use of one holder for a universal series, which can only give the merited popularity of stereoscopic views to collectors. This holder should be collapsible, made of a light metal, and should contain lenses carefully selected as to a uniform strength and not easily breakable.

The instructive value of these views and their use for educational purposes can not be estimated. If carefully prepared series of views of the "beaten tracks" through Europe were made no more popular souvenir at a low price could be offered to the tens of thousands of tourists who annually travel so extensively. They would always remain a source of instruction and pleasure to them and their friends.

Suitable series could easily be adopted to assist in teaching geography in the public schools, and as time passes their value would increase to assist in the study of history. For example, a series on Japan and Japanese life, the construction of the Panama Canal, the extensive developments in Brazil and Argentina would convey more accurate and intelligent impressions than chapters of descriptive matter.

[The consul-general names three Copenhagen firms which might become interested in the development of this trade in Denmark. Their names may be secured from the Bureau of Manufactures.]

JERSEY ISLAND.

CATTLE SHIPMENTS A SPECIAL FEATURE—IMPORTS AND EXPORTS.

Consular Agent E. B. Renouf, of St. Helier, in his report on the foreign commerce of Jersey Island, located in the English Channel, says:

During 1907 the number of Jersey cattle exported to the United States was 446, valued at $67,761, as against 241 head, valued at $30,265 in the preceding year. The island authorities continue to take the most stringent precautions against infection from the Continent of cattle diseases. Foreign cattle are not allowed to land and the imports of hay and straw from the Continent is prohibited.

There is no indication of tuberculosis among Jersey cattle. The Danes continue to make large purchases of relatively low-priced animals for dairy purposes, but the best grades find their way to the United States.

The value of the early potato crop exported during 1907 is stated to be $1,835,933, an increase of $335,934 over 1906. The total imports into the island during 1906 were valued at $5,225,818, against $5,306,456 in 1905, while the exports therefrom amounted to $3,473,751 and $3,653,919, respectively, for the two years. The imports and exports of the principal articles, in quantities, are shown in the following comparative statement:

Articles.	1905.	1906.	Articles.	1905.	1906.
Imports.	*Tons.*	*Tons.*	*Imports*—Continued.	*Tons.*	*Tons.*
Animals: Horses	a 289	a 263	Salt	567	570
Breadstuffs:			Sugar	1,145	1,259
Barley	620	813	Timber	c 133,302	c 226,759
Bran	2,033	2,451	*Exports.*		
Buckwheat	333	230	Animals:		
Flour	5,847	5,781	Bulls	a 109	a 104
Meal, etc	541	1,042	Cows, etc	a 1,764	a 1,819
Oats	2,502	2,873	All other	a 71	a 64
Bricks	92	138	China stone	4,091	3,854
Cement, etc	2,079	2,625	Coal tar	d 192,400	d 148,812
Coal	54,081	58,671	Flowers and bulbs	133	189
Eggs	164	175	Gravel	4,852	4,486
Fertilizers	8,620	8,812	Potatoes	48 182	52,422
Paraffin	b 6,272	b 6,073	Vegetables	.....	289
Potatoes	3,220	1,841			
Provisions	3,203	3,274			

a Number. b Barrels. c Cubic feet. d Gallons.

No American ship entered Jersey ports during the last year. In the absence of direct means of communication it is impossible to trace imported goods to their original source, but it is safe to say that Jersey absorbs proportionately to the number of its inhabitants (52,576) and their relative prosperity, at least as large a quantity of American products as a community of corresponding number and pursuits in England.

PERSIA.

IMPORTS AND EXPORTS AND THE COUNTRIES TAKING PART THEREIN.

The following information and statistics are compiled from a printed report of the British vice-consul covering the foreign trade of Bushire, the principal port of Persia, in the Gulf of Persia:

The imports and exports into and from Bushire during the years ended March 31, 1906 and 1907, from and to the principal countries, were as follows:

Countries.	Imports.		Exports.	
	1906.	1907.	1906.	1907.
United Kingdom	$1,567,825	$1,620,262	$450,710	$849,511
India	857,744	1,282,517	742,706	730,065
France	280,879	496,475	16,128	15,422
Austria-Hungary	150,089	326,575	15	1,800
Germany	127,813	123,896	51,414	117,905
United States	7,162	35,934	5,420	78,837
Other Countries	716,479	308,228	1,020,569	1,112,676
Total	3,707,941	4,193,887	2,286,962	2,912,216

The principal imports in 1907 were: Cotton piece goods, $1,775,975; loaf sugar and candy, $639,229; arms and ammunition, $156,940; cotton sewing thread, $66,111; matches, $51,225; drugs and medicines, kerosene, mercury, and hardware, copper bars, sheets, and wire.

Of the imports cotton piece goods amount to nearly 39 per cent of the whole, and of this import $1,345,354 worth was composed of British manufacture, imported direct from the United Kingdom, being equal to 75 per cent of the whole.

According to the British vice-consul, no less than 157 British steamers, with a total tonnage of 221,330 tons, cleared from Bushire in 1907, but the competition of other steamships caused the British lines to reduce their rates to the United Kingdom from $7.30 to $4.86 per 1,680 to 2,016 pounds or 40 cubic feet. Freight to Hamburg was also reduced. Freight per British lines to New York, by transshipment, is $9.30 for carpets and $8.28 for cargo.

DETAILS OF PRINCIPAL IMPORTS.

In relation to imports which should interest American exporters, the vice-consul writes as follows:

One of the immediate effects of granting a constitution has been an increase in the number of news sheets and journals printed in the different towns of Persia. The paper on which these are printed is exceedingly poor in quality, and at one time during the year the publishers were hard put to find sufficient suitable material. Very large supplies of cheap gray and white thin foreign writing paper are in use.

There was an increase of British piece goods of $94,000, and an increase of Indian piece goods of $292,000; this, however, is largely British piece goods transshipped at Bombay. White shirtings, 40 to 41 yards, still hold first place. In March, 1907, they stood at $3.24. They are followed by white mulls, 20 and 22 yards, chintz "Dubahrs," white, 65 yards, and chocolate, 60 yards, and Turkey-red twills, 50 yards. The print market up country is reported spoiled, to a certain extent, by Russian prints, but Shiraz is reported still true to Manchester. It is estimated that as much as 60,000 pieces, or 240 bales, of dyed piece goods have been imported during the past year into Bushire, three-fourths of which were mull or "Kasawari," as it is termed when dyed with indigo. Black Italians of good quality are coming into fashion for the "cheddars" in preference to black twills. Cheddars are the black outer garments worn by Persian women of all classes, which cover the head and descends to the skirts. This is an instance of the growing inclination of the better class Persians toward luxuries. The German and Russian agencies in Bushire have been busily employed in dispatching to Europe samples of British goods for imitation, but the imports of German and Russian piece goods have declined.

PRINCIPAL EXPORTS.

In 1906–7 by far the largest proportion of the increased exports went to the United Kingdom. The rest of Europe, except France, increased their imports from Persia, and there is a noticeable extension of exports to the United States.

There was great development in the exports of cummin seed, which is usually packed in bags of 168 pounds. Black seeds (Siah-dane) were in demand. These are used as ingredients for pickles, as well as possessing medicinal qualities.

The export of almonds in 1906–7 is the largest on record. To save freight, almonds are shelled in the producing districts, almonds in the shell being seldom shipped. The prices in Bushire during the year were, approximately, $4.42 to $5.14 per 124 pounds for almonds in shells, and for almond kernels $1.05 to $1.22 per 6½ pounds. Dried grapes are now going forward to the United States.

The commerce in gum tragacanth, known to the Persians as "Katyra," has sprung up within the last few years, and seems likely to take still further

hold in the population. There have been amounts, not unimportant, sent to the United States, Germany, and France.

The exports of drugs and medicines embrace rosewater, asafoetida, linseed poppy seed, licorice, sesame, madder root, gallnuts, salep, jujube, castor seeds, colocynth, oxtongue flower, and gunjide. The seeds of the latter are largely used for adulteration of opium, and have now, it is reported, reached half the price of opium. The export of opium advanced nearly $165,000 in 1905–6, but still fell short of the average. The British market proved much more satisfactory than the Chinese, and exports to London were $121,660. Licorice grows wild in abundance on the Marvdasht Plain, near Shiraz, but, owing to heavy transport charges, is practically left untouched.

The exports of raw and undressed goatskins are yearly growing. In March, 1906, the prices in Bushire ranged from $5.02 to $8.65 per 20 skins. These prices have gradually fallen to $3.20 and $4.40. Nearly all the export goes to India. A better knowledge and improved system of preparation for export have conduced to this increase, but the process still requires improvement whereby the demand would certainly extend to the United States.

CHINA.

SOUTHEAST MANCHURIA.

TRADE CENTERS OF DISTRIBUTION—DEVELOPMENT OF RESOURCES.

Vice-Consul-General Charles J. Arnell, of Mukden, who is in charge of the American consular establishment at Antung, furnishes the following report on the trade of southeastern Manchuria, especially the Yalu River region, and its probable future:

The centers of trade of southeastern Manchuria are Antung, Tatungkou, Fenghuangcheng, Takushan, Kuantien, Tunghuahsion, Huajen, Pingtingcheng and Hsiuyen. Of these places the three first named only have been opened to foreign trade; and only Antung, Tatungkou, and Takushan are seaports. While each of the interior cities has its own area of distribution and collection, these areas are all included in the spheres of trade of some one or other of the port cities through which the exports and imports of the former must naturally pass. The seaports, therefore, have the greatest opportunity for commercial growth.

FAVORABLE SITUATION OF ANTUNG.

As a trade center and as an influence in the development of southeastern Manchuria, Antung is at present by far the most important of these cities. Its sphere of trade extends northward to the headwaters of the Sungari, westward to Hailungcheng, and southward to Tatungkou, and includes the towns along the Korean side of the Yalu basin. The situation, 30 or 40 miles from the mouth of the Yalu, is rather favorable for shipping. Vessels drawing as much as 10 feet are able to reach it, while the largest steamers may anchor off Tasarugi Island 25 miles below the town, between which points goods are transported by lighter. A little dredging in the neighborhood of Antung should enable steamers now compelled to anchor amidstream to lie up against the bank and load and unload their cargoes directly. Steamships now run regularly to Chefoo, Tientsin, Dalny, Chemulpo, Fusan, Moji, and Kobe. Junks and other small craft ascend the river for a distance of 200 miles, supply-

ing the bordering region. The Yalu, however, has the serious disadvantage of being closed to navigation during the four months of winter.

There are railway connections with Seoul, Chemulpo, and Fusan; and a light line, to be altered within two or three years to standard gage, connects with the South Manchurian Railway at Mukden.

RAILWAY CONNECTIONS AND PROPOSED EXTENSIONS.

The Korean Railway, which extends for a part or the whole of the distance to the same points which may be reached by water from Antung, is unable to compete with steamer transportation. The light railway to Mukden is worked to its full capacity, but owing to its inadequate facilities has only an insignificant share in the trade. The extension of the terminus of the Korean Railway from New Wiju (Korea) to Antung may possibly, if aided by some reduction in freight rates, render the railway freight traffic profitable, and should, in any case, considerably increase the small share of Antung trade now enjoyed by the Korean line during the four winter months when the river is closed to navigation. The production and consumption in north Korea is said to be an insufficient basis for a paying freight traffic for that portion of the Korean Railway extending between Pingyong and New Wiju, and the only other source from which it could be derived is Antung. With the present high transportation charges, however, the amount of traffic is so small as to be unprofitable. The passenger traffic over the Korean line to and from Antung is always considerable, but alone is not sufficient to make the enterprise reasonably remunerative. The construction of a railway between New Wiju and Yongampo, a town near the anchorage of the larger vessels trading with Antung, has been discussed. In this event the bulk of the goods now transported to and from Antung by lighter would probably be carried by rail, which should be as cheap and more prompt and satisfactory.

The bridge across the Yalu between New Wiju and Antung, which is expected to be completed within another two years, will be built off the Japanese concession at the latter place. If it is to be a closed bridge, as is said, it will prove a serious drawback to native and foreign trade at Antung, inasmuch as it would prevent steamers from anchoring off the Chinese town and proposed foreign concession. It is to be hoped that the authorities will either construct a drawbridge or select another site.

TRADE AND POPULATION OF ANTUNG AND TATUNGKOU.

The three leading exports of Antung, in the order of their importance, are timber, silk, and beans. The imports consist of cotton goods, petroleum, flour, sugar, cigarettes, and miscellaneous articles. The value of the annual trade of Antung is estimated at about $8,000,000, the exports and imports being about equal.

The permanent population of Antung comprises between 15,000 and 20,000 Chinese, 6,000 Japanese, 20 Europeans and Americans, and a number of Koreans. There are 110 Chinese, 15 Japanese, and 3 occidental business firms or agencies of importance, while the Hu

Poh, or Chinese Government bank, and three Japanese banks have branches in Antung.

Tatungkou is situated south of Antung about 15 miles from the mouth of the Yalu. Vessels trading there anchor some 4 miles from the town, and the goods are carried back and forth by lighter over a mud creek. Steamships running between Antung and Chefoo usually stop at Tatungkou en route. The sphere of trade is comparatively small. The exports and imports of Tatungkou are of the same nature as those of Antung. Its present trade is valued at somewhat less than $1,000,000 annually.

This town formerly had a larger trade in timber than Antung. Since the late war, however, and the subsequent organization and activity at Antung of the Japanese timber bureau the trade in lumber has become concentrated almost entirely at Antung. The Chinese population of Tatungkou is about 6,000. There is a small Japanese colony consisting mostly of petty dealers in miscellaneous articles.

Fenghuangcheng lies about 40 miles to the northwest of Antung, and is connected therewith by road as well as by the light railway running to Mukden. Situated within the sphere of trade of Antung, it is merely a center of distribution and collection for its own immediate vicinity, and its present business is insignificant. Fenghuangcheng was founded for political, not commercial, purposes, having been the capital of the intendant of the Eastern Marches, the administrative official of the Yalu region, until the recent removal of the seat of government to Antung. There is no likelihood that Fenghuangcheng will, even with the fullest development of southeastern Manchuria, attain any considerable commercial importance. The total population is about 18,000, including 200 Japanese.

COMMERCIAL IMPORTANCE OF TAKUSHAN.

Takushan, situated southwest of Antung, on the Tayang River, about 7 miles from its mouth, was founded some one hundred and twenty-five years ago by merchants from Shantung, Shansi, and Canton, who were attracted by the timber and silk resources of this region; and until the later establishment of Tatungkou, with the almost immediate diversion of the timber industry thereto, was the most important commercial port in southeastern Manchuria.

Steamers of any size may anchor off the river mouth, and their cargoes may be loaded and unloaded by junk or lighter. The river is open to navigation throughout the year. It is said that the short stretch of river between the town and the sea could be dredged with comparatively small expenditure, so as to enable vessels to anchor off the town. Steamships at present ply between that port and Chefoo, Tientsin, and Dalny; most vessels trading with Antung stop there en route.

Takushan is connected by cart roads with Tatungkou, Fenghuangcheng, Hsiuyen, and Kinchou, which at present constitute its only routes of communication with the interior. The sphere of trade of Takushan contains not only some mineral wealth, but also extensive silk and agricultural resources. The percentage of arable land is larger than in any of the regions dependent upon the other marts of southeastern Manchuria. The exportation of beans and bean cake

is said to equal that of Antung and Tatungkou combined. The present trade is about equal in value to that of Tatungkou.

The population of Takushan is given as between 8,000 and 10,000. Although the town has not been opened to foreign trade, a considerable Japanese colony has for some time been settled there, engaged chiefly in the exportation of bean cake and the importation of Japanese miscellaneous goods. The absence of a maritime customs house like those at the open ports obviates the necessity of paying the usual duties leviable on foreign imports and exports, a condition which can not but result in placing goods handled in the regular way at a considerable disadvantage.

THE RAILWAY A FACTOR IN FUTURE DEVELOPMENT.

The interior towns must under ordinary circumstances continue to be no more than centers of distribution and collection for limited areas of a sparsely inhabited territory. With the future extension of the railway throughout southeastern Manchuria, however, the trade areas of the towns which it touches will naturally expand, and with the opening of mines the towns in the surrounding region will be likely to increase in importance. The factor which will exert the greatest influence on commercial development is the railway. The only railway at present projected through southeastern Manchuria is the standard-gage line to replace the present Antung-Mukden road. According to the provisions of the Japanese additional agreement of 1905, this will be built and operated by Japan, with the right reserved to China of buying it over at the expiration of fifteen years from the date of its completion. The route, as yet undecided, will be influenced by two considerations: (1) Whether the greater utility to be sought shall be strategic or commercial; and (2) the amount of capital available for construction purposes. Various routes have been suggested: Antung (1) via Fenghuangcheng to Mukden; (2) via Fenghuangcheng to Liaoyang, or some point between Liaoyang and Tashihchiao; (3) via Takushan to Kinchou; and (4) via Tunghuahsien to Kirin. When completed the railway will have an important part in the trade of Antung and in the development of the dependent region. Others will probably sooner or later be undertaken.

TIMBER THE CHIEF PRODUCT EXPORTED.

The three exports which form the basis of the present trade of southeastern Manchuria are timber, silk, and beans. The mineral resources are as yet practically untouched. Tobacco, cotton, indigo, opium, hemp, and medicines are also exported, but in such small quantities as to be insignificant. Timber is the most important product of southeastern Manchuria. The resources are extensive, and with proper methods of reforestation should furnish a timber supply for many years. Timber is largely exported from Antung, small quantities also going from Tatungkou. Most of it is shipped to Chefoo, Tientsin, Dalny, and other Chinese ports, very little being sent abroad. Yalu timber is too poor in quality and high-priced to be imported into Japan in competition with the local product, while Korea supplies its own demand from the eastern bank of the river.

The average annual output thus far has varied between $2,500,000 to $3,500,000 worth.

The forests which supply the timber are along the upper parts of the Yalu River and its tributary, the Hunchiang, at distances varying from 200 to 400 miles from Antung. The logs are floated from the camps to the market in rafts. The principal kinds of timber felled are pine (Chinese, hunsun), fir (shasun), larch (buanghuasun), walnut (chiumu), cassia (tuanmu), oak (tsomu), and elm (yumu). Pine and fir constitute the larger part of the output. Oak, the only kind of Yalu timber for which there is a present foreign demand, is rather scarce.

The general character of the present product is inferior, most of the logs containing numerous knots, and many of them being extremely fissured. With the improvements in conducting the industry certain to take place in the future, these defects may in a measure be overcome.

PROPOSED CHINO-JAPANESE COMPANY—OTHER ENTERPRISES.

Until a few years ago the timber industry was entirely in the hands of Chinese, who paid a small tax to the Government for the privilege of cutting. The Russians some time before the late war made arrangements to secure certain amounts of timber for construction purposes at Dalny and Port Arthur. Japan in 1905 concluded an agreement with China providing for the future organization of a joint official company to exploit the timber resources of the Yalu. Negotiations have been protracted because of misunderstanding regarding the terms, but it is believed that the company will be organized in time to commence operations on the opening of the Yalu River next spring. The capital will be wholly official and will be furnished by the two governments equally. The headquarters of the company will be at Antung. The cutting and the sale of the timber will, it is said, be conducted in part directly by the company, and, in part, let out by bid or as a monopoly to private firms. The improved methods to be used in the industry are likely to result in a considerable increase in output as well as in a better quality of product.

The timber at present commercially exported from Antung is practically all in log form. The Japanese have erected two sawmills of small capacity, one at Antung and the other at New Wiju, but the output is used almost wholly for local or official purposes. It is probable, however, that sawmills will before long be established both by the company and by private persons, and that the timber will in the near future be exported largely in sawed form, at a correspondingly increased value. The erection of a paper factory is also contemplated. The Yalu seems well-fitted to become a shipbuilding center for small coastwise vessels such as are able to navigate the river. Wood and iron are both available in plentiful quantities. There is a point a short distance below Antung considered suitable for that purpose.

SILK PRODUCTION—BEANS AND BEAN-CAKE.

The product next in importance to timber is wild silk (tussah). The value of the average total annual production is estimated at

between $2,000,000 and $3,000,000. The product is marketed in the form of thread, cocoons, waste, and cloth. Little cloth, however, is manufactured here, the weaving being done at the Chinese ports to which the thread is exported. The thread is largely shipped to Shanghai, whence it is distributed to other Chinese ports and to some extent to America and Europe. Chefoo is the principal market for the cocoons and waste; while most of the locally woven cloth is bought by the Japanese. The present market values are: Thread, 9.6 to 10.4 cents per "liang" (=1.3 ounces); cocoons, 40 to 41 cents per 1,000; waste, 8 to 16 cents per catty (=1⅓ pounds); and cloth, $2.50 to $5.50 per roll of 20 yards.

The silkworm is reared on the leaves of two species of trees, a scrub oak and the Chingkantzu, which grow wild on all the hillsides of southeastern Manchuria. The chief centers of production are Kuantien, Tunghuahsien, and Hsuiyen; but the industry is carried on to a greater or less extent throughout the whole region. There is still room for a considerable increase in output, and as soon as the remoter parts of the country are brought by rail into closer contact with the markets, there should be a marked expansion of the industry.

The value of the annual production of beans and bean-cake is estimated at between $1,500,000 and $2,500,000. The bean-cake is largely exported to Japan, and the beans to central and southern China. Except by the construction of a railway to Kirin, which would bring the valley of the upper Sungari within the sphere of trade of Antung, there will be little opportunity for an increase of the value of the bean output.

MINERAL RESOURCES—PROBABLE FUTURE DEVELOPMENT.

The latent resources of southeastern Manchuria are minerals, which are believed to be valuable and may in time become the most important output of this region. Gold, either quartz or placer, has been found here and there throughout the whole territory; silver is present principally in the vicinity of Fenghuangcheng, Tsaohokou, and Saimachi; and valuable copper deposits have been discovered near Tunghuahsien and Maoerhshan. Large beds of anthracite coal in the region of Penhsihu, and others of a quality not yet determined at various other points, contain the necessary supply of fuel for the operation of smelters which may in the near future be established in connection with gold, silver, and copper mines. Although a part of the capital for the development of the mineral resources will doubtless come from the inhabitants, the amount thus available would be insufficient for conducting the enterprise on a scale commensurate with the extent of the resources.

Such direct benefits as will be contributed by the development of the mineral and timber resources under the conditions described, together with those which will come from the probable increase in silk and bean production, assure a good future for the trade of southeastern Manchuria.

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COMMERCIAL REVIEW.

TRADE OF THE THREE LEADING PORTS OF THE NANKIN DISTRICT.

Consul James C. McNally, of Nankin, furnishes the followi report on the foreign and coastwise trade of the three leading Chine ports of his district for the third quarter of the years 1906 and 19 the principal articles being:

Articles.	Nankin.		Chinkiang.		Wuhu.	
	1906.	1907.	1906.	1907.	1906.	1907.
IMPORTS.						
Bags.....pieces..	.....	.....	199,720	136,700	775,940	1,037,
Copper.....pounds..	380,838	1,567,687	.....	.....	256,610	2,
Cotton manufactures:						
Cambrics, etc....pieces..	1,993	4,182	7,280	13,200	3,870	6,
Cloth, all kinds, etc. do....	1,576	1,827	17,351	14,033	1,320	2,
Drills—						
American.....do....	17,807	8,773	47,220	18,980	8,175	5,
Dutch.....do....	30	60	720	180	120	1,
English.....do....	480	1,320	3,855	5,385	3,285	5,
Flannel.....do....	2,679	2,694	.....	.....	2,840	4,
Jeans—						
American.....do....	1,000	900	3,406	2,660	1,520	
English.....do....	7,000	5,350	11,980	14,135	12,355	24,
Sheetings.....do....	.....	20	17,775	14,230	540	
Shirtings—						
American.....do....	3,520	6,240	6,655	5,400	6,110	6,
English.....do....	27,488	42,697	129,763	130,132	31,296	41,
All other.....do....	150	1,150	1,524	900	25,610	41,
Yarns.....pounds..	158,093	390,703	3,317,703	5,879,330	1,255,686	1,828,
Glass, window.....boxes..	.....	.....	1,122	1,458	702	
Iron and steel, and manufactures of:						
Bars.....pounds..	80,913	99,042	348,980	410,831	42,789	30,
Nails, and nail rods. do....	40,057	48,788	1,225,827	782,471	125,969	128,
Sheet and plate...do....	40,257	37,857	53,320	35,991	.....	.....
Wire.....do....	3,466	3,199	85,445	94,376	46,255	50,
Matches.....mille..	53,100	31,650	1,083,700	561,250	185,850	174,
Needles.....gross..	4,611	5,097	28,032	40,470	15,450	15,
Oil (kerosene):						
American.....gallons..	245,000	375,000	1,466,000	2,061,525	823,900	1,001,
Sumatra.....do....	.....	.....	35,000	354,886	69,500	72,
Opium.....pounds..	33,150	46,241	93,551	103,820	64,660	126,
Sugar.....do....	2,284,896	1,415,380	39,762,324	31,634,789	8,397,920	11,815,
Woolen and cotton mixtures, cloth, and stripes...yards..	6,053	1,385	9,004	14,079	18,719	15,
EXPORTS.						
Beans and peas...pounds..	103,041	171,157	7,849,657	149,963	23,994	17,
Feathers.....do....	36,924	7,065	.....	.....	.....	.....
Flowers.....do....	.....	.....	3,711,739	2,576,156	167,558	79,
Hemp.....do....	1,462,701	11,351	.....	.....	178,222	69,
Hides.....do....	7,465	6,265	.....	3,999	.....	.....
Rice.....do....	.....	.....	4,347,447	143,697	51,906,087	82,179,
Seeds.....do....	29,326	.....	2,621,079	1,876,464	3,381,821	6,488,
Silk, and manufactures of, pounds.....	73,460	200,784	159,273	182,888	201,550	318,
Tea.....pounds..	267	1,406	.....	.....	115,581	115,

The exports from Chinkiang also included 5,993,835 pounds groundnuts in the three months of 1906 and 1,491,227 pounds in t corresponding period of 1907; also 2,019,096 and 2,142,664 pounds oils were exported during the comparative periods. The exports flour from Wuhu increased from 1,280,480 pounds in the 1906 quart to 4,192,818 pounds in the three months of 1907.

The number and tonnage of vessels entered and cleared at t three ports during the third quarter of 1907, as compared with t corresponding period of 1906, was as follows: Nankin, 861 vessels 686,011 tons, against 606 vessels of 543,978 tons; Chinkiang, 1,9 vessels of 935,867 tons, against 1,415 vessels of 855,580 tons; Wuh 879 vessels of 799,445 tons, against 672 vessels of 760,619 tons.

KOREA.

CONTINUED EXCESS OF THE IMPORTS OVER THE EXPORTS.

Consul-General Thomas Sammons, of Seoul, advises that the foreign trade of Korea for the eleven months ending November 30, 1907, aggregated approximately $25,442,723, details of which follow:

Of the total the imports were $18,137,370 and the exports $7,305,353. The total business of Korea for a like period in 1906 was $2,632,307 less in imports and $3,159,043 less in exports. The high price of rice was largely responsible for the increase in the aggregate trade returns for 1907. For many years the balance of trade against Korea has been very high. This unfavorable condition has been overcome in but few instances in recent years.

The exports of gold are not included in the totals for the eleven months of 1907 referred to. Including the gold exports, however, the imports would still be twice the aggregate of the exports.

JAPAN.

COMMERCE OF YOKOHAMA.

VALUE OF TRADE—DISTRIBUTION BY COUNTRIES—MARITIME STATISTICS.

Consul-General Henry B. Miller, of Yokohama, reports on the foreign trade of that important Japanese port as follows:

The total foreign trade of Yokohama for the calendar year 1907 amounted to $187,316,583, against $174,958,876 in 1906 and $167,150,752 in 1905. The value of the imports and exports for the three mentioned years was:

	1905.	1906.	1907.
Imports	$94,358,206	$74,535,174	$85,406,636
Exports	72,792,546	100,423,702	101,909,947

The leading importing countries in their order named were the United Kingdom, United States, Germany, China, British India, and Dutch India, while the principal countries of export with their ranking were the United States, France, the United Kingdom, Italy, China, and British India. The volume of trade between Yokohama and the several countries during 1907 is shown in the following statement:

Countries.	Imports.	Exports.	Countries.	Imports.	Exports.
United States	$15,594,669	$52,659,738	Straits Settlements	$342,981	$565,381
France	1,401,785	19,082,769	Dutch India	3,703,705	245,521
United Kingdom	26,134,045	6,360,174	Hongkong	139,619	1,134,960
Germany	11,249,566	2,111,873	Canada, etc	387,027	952,751
Belgium	3,084,340	409,219	Australia	3,187,852	1,211,681
Italy	242,386	6,122,259	French Indo-China	1,747,085	38,739
Switzerland	793,420	29,701	Other Countries	4,984,937	4,330,249
Austria-Hungary	202,196	45,749			
China	6,340,941	3,738,673	Total	85,406,636	101,909,947
British India	5,920,132	2,870,510			

PRINCIPAL IMPORTS AND EXPORTS.

Of the articles of import into Yokohama in 1907, raw cotton ranked first, with a value of $7,196,049, against $4,581,588 in 1906

and $7,168,886 in 1905. The next import of importance was raw wool valued at $5,287,615, as against $3,183,024 in 1906 and $3,062,762 in 1905, which was followed by rice worth $5,539,734, $6,303,727, and $11,912,939 for the three years, respectively. The other leading articles of import were flour, sugar, kerosene oil, manufactures of iron and steel, and cotton manufactures. The chief article of export was tea, the value of which was $77,477,111 in 1907, $71,530,273 in 1906, and $55,453,420 in 1905. The following statement shows the value of the principal articles of imports into and exports from Yokohama during the three mentioned years:

Articles.	1905.	1906.	1907.
IMPORTS.			
Cotton, and manufactures of:			
Raw	$7,168,883	$4,581,588	$7,196,049
Prints	80,438	160,454	175,279
Satins	305,016	251,033	332,804
Shirtings	2,032,745	2,045,518	1,901,822
Velvets	229,908	185,259	259,434
Yarn	605,322	1,740,855	715,974
Fertilizers	911,054	679,723	1,208,094
Flour	2,384,626	1,819,166	1,352,080
Glass, window	322,339	586,425	391,640
Iron and steel, and manufactures of:			
Bar and rod	1,693,125	1,157,600	1,807,124
Galvanized	829,265	917,109	1,637,829
Pig and ingot	1,001,488	456,671	306,676
Pipes and tubes	475,991	502,521	718,223
Plate and sheet	1,180,175	831,597	1,755,648
Rails	272,800	430,960	816,983
Nails	713,703	546,318	857,846
Leather, sole	3,260,614	439,153	867,170
Oil, kerosene	4,916,738	1,640,440	2,096,557
Rice	11,912,939	6,303,727	5,539,734
Sugar	2,608,239	4,886,093	3,790,674
Wool, and manufactures of:			
Raw	3,032,762	3,183,024	5,287,615
Cloth, etc	1,947,395	4,136,988	1,813,947
Yarn	2,008,047	399,304	1,642,426
EXPORTS.			
Copper, refined	1,558,227	3,711,832	3,982,728
Lacquered ware	429,270	565,873	526,697
Oil, fish	297,878	455,581	947,171
Porcelain, etc	316,739	400,378	376,246
Silk, and manufactures of:			
Raw	35,970,193	49,720,725	58,052,995
Handkerchiefs	2,414,293	2,717,543	2,569,479
Tissues	14,281,387	16,552,755	14,099,135
Waste	2,787,544	2,539,250	2,775,502
Tea	3,271,540	2,726,602	2,855,099

The number of vessels entered at the port of Yokohama during 1907 was 1,195 of 3,489,822 tons, as compared with 1,062 vessels of 3,276,949 tons in 1906, and 924 vessels of 2,847,031 tons in 1905. The vessels cleared in 1907 numbered 1,110 of 3,303,096 tons; in 1906, 1,052 of 3,240,973 tons, and in 1905, 894 of 2,760,303 tons.

NEW PORT OPENED.

FOREIGN TRADE MAY NOW BE CARRIED ON WITH OMUTA.

Consul George H. Scidmore transmits an article from the Nagasaki Press relative to the opening of the Japanese port of Omuta, in the Gulf of Shimabara, Kyushu, in April, when the new harbor will be completed, from which the following extracts are taken:

The new harbor is divided into two sections—inner and outer—with areas of 40,000 tsubo and 150,000 tsubo (33⅓ and 125 acres), respectively. A break-

water, 12,000 feet in length, will inclose the outer harbor, with the exception of a gap of 450 feet to allow vessels to pass. The two sections will be divided by locks, 66 feet in breadth, by which means the inner harbor will be kept free from the great tide fall, 18 feet, a depth of 28 feet being the minimum maintained.

Three steamers of 10,000 tons each can be loaded simultaneously in the inner harbor if necessary, 7,000 tons of coal being shipped daily.

The works are being carried out by the owners of the famous Miike collieries, for the purpose of saving the cost of transporting the coal to Kuchinotsu for shipment. At present the cost to the company of shipping the coal is 1 yen (50 cents) per ton; as the output for last year is estimated at 1,400,000 tons it represents a considerable outlay. The company expects to place the coal on board at Omuta for about 50 sen (25 cents) per ton, so that the saving effected will probably be well over half a million yen ($250,000) per annum. The new harbor works were estimated to cost 3,000,000 yen ($1,494,000); it is therefore expected that the outlay will be saved in about five years.

The dispatch from Tokyo states that other Kyushu ports will be greatly affected by the opening of the new harbor. Kuchinotsu as a coaling port will practically cease to exist, but we can not understand how other ports in the island will lose trade, as there is no reason to believe that Omuta will become a port for general trade.

STRAITS SETTLEMENTS.

AN IMPORTANT MARKET FOR AMERICAN MANUFACTURERS TO DEVELOP.

Of the world's greatest seaports Consul-General Thornwell Haynes states that Singapore, in tonnage movement, exclusive of warships, transports, native craft, yachts, and vessels under 50 tons, ranks ninth, the total entering and clearing in 1907 being nearly 14,000,000 tons. Other favorable comparisons and opportunities for American goods are also revealed as follows by Mr. Haynes:

Hongkong ranks higher as a commercial port, but in cargo value falls below Singapore's $300,000,000. With the exception of Hongkong, Singapore is preeminently the transfer station of eastern trade, nineteen-twentieths of the value of her imports and exports being transshipments, the one-twentieth consisting of home-raised cocoanuts and pineapples. Only one six-hundredth of her tonnage is local. Within the last ten years her total trade value has doubled. In 1896 there entered five vessels with 7,408 tons from America, and 44 with 77,727 tons cleared for there; in 1906 the figures were, respectively, 43 vessels with 131,593 and 58 with 201,715 tons.

ARTICLES IN DEMAND—PRESENT AMERICAN TRADE.

Few places possess the trading facilities of Singapore. Here is the trade clearing-house of the East with free labor, military protection, superior banking facilities, free trade, and a magnificent harbor, which will soon be improved at a cost of $5,000,000. Here are people who want sewing machines, typewriters, cotton goods, drugs, chemicals, motor cars and boats, tobacco, cigars, lamps, musical instruments, phonographs, machinery, electrical appliances, food, oils, etc., and English and Germans are here busy supplying them, while the American is at home posting letters and circulars.

However, typewriters made in the United States are being sold by English agents and one American company's sewing machine is being energetically pushed in the Straits Settlements, the Federated Malay States, Siam, and Java. One-third of the annual total of $700,000 worth of petroleum entering Singapore comes from the

United States. Sumatra, being near, furnishes considerably over one-half of the whole. Of the 21,000 tons of flour, nearly one-half comes from Hongkong and less than one-fortieth direct from the United States, the figures for 1906 being, respectively, 21,057 and 514½ tons. Approximately two-thirds, however, of that entering from Hongkong is American flour.

INDIRECT REPRESENTATION.

Apart from typewriters, sewing machines, petroleum, and flour, what are American merchants doing toward the sale of articles wanted in a tropical climate? What they are not doing in this colony that sells to the United States $16 worth of goods to every dollar's worth it buys is shown by the fact that of the 50 different lines of American business represented in Singapore 36 are in English hands, the remaining 14 being attended to by only 5 Americans. Ten makes of American typewriters are on the market, 9 of them sold by English. The only American bank has an English manager, as is true of the same bank in Hongkong and Shanghai, a condition due, it is said, to the Englishman's superior training in exchange. American watches, scales, vehicles, beer, drugs, medicines, and automobiles are sold exclusively by English.

During 1907 over 300 trade letters were received at this consulate. Every mail brings American advertising matter which is given as wide publicity as possible. The regular issues of twenty-four trade papers are received and kept on the reading table within reach for easy reference, and manufacturers are assured that all printed matter or other forwarded will be kept where it will prove of most value.

FEDERATED MALAY STATES.

AREA AND POPULATION—GOVERNMENT AND GEOGRAPHIC CONDITIONS.

Consul-General Haynes also sends the following information concerning the Federated Malay States and the prospects there of mineral and agricultural development:

The Federated Malay States, comprising Perak, Selangor, Negri Sembilan, and Pahang, have an estimated area of 26,380 square miles and a population of about 900,000. Pahang is the largest of these states, covering nearly half the combined area, and Perak is the richest and most important. The administration is subject to the British secretary of state for the colonies, under whom the governor of the Straits Settlements holds the office of high commissioner of the Federated Malay States. The principal civil officer in the states is the resident-general, who is assisted by a staff supervising the principal departments.

The land slopes to the coasts from a central mountain range with heights of 3,000 to 7,000 feet, and is everywhere covered with a dense tropical forest of large timber trees, most of which are over 100 feet high. From this watershed flow innumerable streams, some of which are navigable for light-draft steamers 50 miles from the sea.

MINERAL AND AGRICULTURAL PRODUCTS.

Among the natural resources of the states are minerals, such as tin, gold, lead, iron, silver, copper, zinc, etc. Tin is by far the most important, furnishing about 60 per cent of the world's production. Only

alluvial surface deposits have so far been worked, and these only in a crude Chinese fashion. The last year for which statistics are available showed a falling off in the quantity of tin produced, due to the fact that the different mines were not equipped with the necessary machinery to mine the lower grades of ore successfully. This condition has been in a large measure remedied by enterprising mine owners, and as a result there will probably be additional development of new deposits and a greatly increased production. A small quantity of gold is mined. There are other minerals as yet untouched which are doubtless of great value.

Forest products comprise gutta-percha, rubber, rattans of many varieties, including the Malacca cane, vegetable oils, resins, and the ataps so extensively used for thatching, gambier, tapioca, sago, rice, and spices, principally pepper. Among the fruits are the mangosteen, banana, apple, lime, durian, duku, chiku, cocoanut, pineapple, guava, orange, soursop, mango, papaya, langsat, and many others. The equable climate is especially favorable for agriculture, in that it causes a constant, active growth. As a result all crops, annual or perennial, show greater progress than the same plants during the same time in countries like Ceylon and South India, where prolonged periods of extremely small or absolute lack of rainfall check growth. The disadvantage of the equable climate is that there is no "close time" for insects or fungous pests. Droughts at regular intervals would hinder parasitic fungi.

RUBBER AND COCOANUT PRODUCTION—FINANCIAL PROSPERITY.

Rubber is the chief agricultural product. At the beginning of the past year there were 242 estates, with 10,745,000 trees, an increase of 4,000,000 over the preceding year, and a total acreage of 85,579, an increase of 45,000. The output of dry rubber was 130 tons in 1905 and 385 tons in 1906. At present there are employed regularly in estate work 70,000 coolies, of whom 31,000 are Tamils, 4,000 Javanese, 1,500 Malays, and 3,400 Chinese.

The cultivation of the cocoanut ranks next in importance. The area under cultivation at present is over 105,000 acres, an increase of 5 per cent over that of a year ago. More than one-half this area is bearing, and the whole is said by the director of agriculture of the Federated Malay States to be worth about $11,200,000. At an average of 40 nuts per tree, the yield, if converted into copra, would amount to over 50,000 tons, with a large and valuable stock of fiber for the manufacturing of coir matting, rope, etc.

Recent experiments have been made with the propagation of camphor by means of cuttings. The first trial of some thousands of trees was not successful. As the camphor plant does not fruit until some thirty or forty years old, the experimenters are obtaining more seed from Japan. Some plantings of cuttings only a few feet above the sea level have attained in two years a height of 12 to 14 feet.

All official reports point to increased activity in every line of business, and the proposed public improvements, providing particularly for better communication and transportation facilities, must when completed add greatly to the wealth-producing capacity of the country. Much progress has been made in the solution of transportation problems. The finances of the States are in a prosperous condition; reports show a surplus of over $2,800,000.

COCHIN-CHINA.

GREAT INCREASE IN RICE SHIPMENTS—AMERICAN FLOUR SALES.

Vice-Consul Louis R. Gage, writing from Saigon concerning the trade of French Cochin-China, sums up the situation as follows:

The amount of wealth in Cochin-China can be estimated every year by its rice exports. In 1906 the shipments of rice amounted to 548,000 tons, of which 149,649 tons went to Europe and the remainder to other countries. The shipments in 1905 aggregated 396,445 tons, 97,437 tons going to Europe and 299,008 tons to other countries. These shipments did not include rice meal and broken rice. The hulling of rice is practically monopolized by the Chinese, who own and operate all mills, with the exception of two, in Saigon.

The imports of American petroleum in 1906 amounted to 110,000 cases, against 230,000 cases in 1905. Petroleum from the Dutch Indies, although being of a lower quality, is also sold in large quantities because of its cheapness. Flour continues to form one of the principal articles of import from the United States, and is either shipped direct or through Hongkong. As a result of the boycott Australian firms have been given the preference in the flour trade and are now competing keenly with American importers. French flour, which is more expensive, is bought chiefly by the military authorities, and the bakeries are using it on a larger scale than ever before.

IMPORTS BY ARTICLES—AMERICAN TRADE.

The total imports of merchandise for domestic consumption into Cochin-China during the calendar year 1906 were valued at $19,304,685. The following statement shows the imports by articles:

Articles.	Value.	Articles.	Value.
Animal products:		Manufactures—Cont'd.	
Live animals	$33,444	Prepared dyes	$284,940
Animal products, etc	356,886	Colors	176,560
Fisheries	100,815	Various compounds	419,824
Animal substances, raw	73,326	Earthenware, etc	205,507
Vegetable products:		Glass and crystal	107,831
Farinaceous foods	840,785	Yarns	643,863
Fruits and seeds	801,136	Tissues	4,563,852
Colonial produce	1,231,480	Paper, and manufactures of	828,469
Vegetable oils and juices	903,614	Hides, skins, etc., prepared	157,612
Medicinal substances	161,221	Manufactures of metals	1,200,298
Woods	115,329	Arms, powder, etc	379,572
Fibers, stems, and fruits for manufacturing purposes	120,991	Furniture	32,449
Various products, etc	380,825	Articles of wood	64,112
Beverages	934,095	Musical instruments	19,178
Mineral substances:		Manufactures of esparto, etc	102,090
Marble, stone, earths, etc	1,137,342	Manufactures of various metals	931,355
Metals	1,825,126	All other articles	11,575
Manufactures:		Total	19,304,685
Chemical products	159,183		

The value of the imports direct from the United States in 1906 was $52,379, consisting of the following articles: Tissues worth $2,104; marble, stone, earths and combustible minerals, etc., $46,192; animal products and wastes, $3,585, and all other articles, $498. There were no exports direct to the United States in 1906, but the shipments of rice to the Philippine Islands during the year amounted to $3,000,000 gold.

The number of vessels entered at Saigon during 1906 was 292, which included 60 belonging to Chinese shipowners flying the British flag, which call from Hongkong loaded with general cargo. The number of vessels cleared, after deducting the 60 Chinese steamers, was 228, all of which were loaded with rice.

FRENCH INDIA.

INCREASE IN IMPORTS AND DECREASE IN EXPORTS.

Consular Clerk Milton B. Kirk, of the Paris consulate-general, furnishes the following statistics concerning the foreign trade of the French settlements in India for the year 1906: Imports, $1,274,736; exports, $5,167,600. Compared with 1905, this shows an increase of $47,988 in the imports, and a decrease of about $80,000 in the exports. Of the imports $318,855 were from France, $5,877 from French colonies, and the remainder, $954,977, from foreign countries. Of the exports, $748,605 went to France, $646,101 to French colonies, and the remainder, $3,776,888, to foreign countries. The French settlements in India consist of Pondichery, the principal port of commerce, Oulgart, Villenour, Bahour, Karikal, Grand Aldée, Nedounkadore, Chandernagar, Mahé, and Yanaon, with a total population estimated at 275,500, of which a little over 1,100 are Europeans.

KONGO FREE STATE.

A SUBSTANTIAL INCREASE NOTED IN BOTH IMPORTS AND EXPORTS.

Consul-General James A. Smith, of Boma, furnishes the following report on the foreign trade of the Kongo Free State:

The total trade of the Kongo Free State for the year 1906, the figures being the latest available, amounted to $20,551,200, an increase over 1905 of $2,326,745. The exports were valued at $14,818,796, which included articles in transit worth $3,571,176, while the imports amounted to $5,732,404, the goods in transit being valued at $1,587,237. The combined value of the imports for consumption and exports of Kongo products, known as special commerce, was $15,392,787, of which $4,145,167 were imports and $11,247,620 exports. This was a gain of $1,012,406 in exports and $270,649 in imports over 1905.

The exports of copal, palm oil, cocoa, and rice showed increases, while groundnuts, coffee, ivory, and palm nuts decreased. The principal export, rubber, shows a loss in quantity but a gain in value. In 1905 the total shipments of rubber amounted to 10,715,334 pounds, the average price per 2.2 pounds being $1.74. In 1906 the average price was $1.93 per 2.2 pounds. Ivory brought an average of $2.19 a pound. The largest imports are tissues, food products (largely canned), liquors and beer, material and accessories for river steamer construction, clothing, metals, coal, glassware, arms and ammunition, machinery and hardware.

PRINCIPAL ARTICLES OF IMPORT.

By far the larger part of the tissues imported consist of cheap unbleached cotton, cotton prints, and a blue indigo cotton drill, mostly

of English and Belgian manufacture, and used extensively for barter with the natives, with whom it is much in favor because of its durability. The uniform worn by the native soldiers is also of this material. Imports of food products are principally canned meats, fish, vegetables, butter and cheese, preserved fruits and conserves for the white population. Dried fish for rationing the State's soldiers and native workmen is imported largely from the west coast of the Portuguese colony of Angola. Under the heading "metals" are included steel rails, bars and plates, copper wire, bar iron, rails, and galvanized corrugated iron largely used in building work by the State and concessionary companies.

The principal articles of import for consumption into the Kongo Free State during the calendar year 1906 were as follows:

Articles.	Value.	Articles.	Value.
Arms and ammunition	$177,636	Lumber and timber	$36,813
Candles	7,352	Machinery	208,300
Coal	62,708	Metals	212,338
Colors	15,923	Oils	35,245
Crockery	12,721	Pharmaceutical products	59,129
Clothing	251,399	Soap	18,407
Construction material	36,279	Stationery	39,433
Chemical products	9,907	Scientific instruments	18,752
Drugs	10,121	Steamers, etc., and materials	277,860
Food products	781,954	Tobacco	38,734
Furniture	28,058	Tissues	1,145,167
Glassware	74,584	All other articles	67,975
Hardware	155,495		
Haberdashery	27,201	Total	4,145,167
Liquors, including beer	335,676		

DOMESTIC EXPORTS—SPECIAL COMMERCE BY COUNTRIES.

The largest items of domestic export in 1906 were: Copal, valued at $209,582; cocoa, $108,736; ivory, $859,848; palm nuts, $283,453; rubber, $9,358,436, and palm oil, $230,977. The value of the special commerce, by countries, is shown in the following table:

Countries.	Special commerce.		Countries.	Special commerce.	
	Imports.	Exports.		Imports.	Exports.
United States	$11,384		British possessions,		
Belgium	2,950,061	$10,480,811	East Coast	$18,411	$59,617
United Kingdom	528,959	162,464	Egypt	4,158	28,501
France	156,246	1,930	Denmark	38,975	
Germany	154,537	29,067	Portugal	32,654	
Netherlands	121,443	88,396	Austria-Hungary	15,246	
Portuguese possessions	82,019	380,024			

Under present conditions the outlook for any large extension of the market for American goods is not a bright one. There are many articles in which American manufacturers should be able, under ordinary conditions, to secure a reasonable portion of the trade, notably in cotton goods, canned meats and vegetables, preserved fruits, arms and ammunition, iron and steel manufactures, machinery, hardware, etc., but ordinary conditions do not prevail, and at present I see but little opportunity for an increase in American exports to this country. There are no direct exports to the United States, and the imports therefrom in 1906 amounted to only $11,384, consisting almost entirely of canned goods and machinery.

DAHOMEY.

THE IMPORTS AND EXPORTS OF AN AFRICAN COLONY OF FRANCE.

The commercial movement of the French African colony of Dahomey is reported on as follows by Consular Clerk Milton B. Kirk, of Paris:

The foreign trade in the year 1906 amounted to $3,670,979, an increase of $126,211 over the year 1905. The imports were $2,029,243, a loss of $42,134 over the preceding year, and the exports were $1,641,736, an increase of $168,345 over 1905. France furnished 35.8 per cent of the imports and took 33.6 per cent of the exports. The direct imports from France amounted to $14,294 of animal products, $117,517 of vegetable goods, $66,199 of mineral products, and $528,306 of manufactured articles.

The direct imports from the United States consisted of animal products worth $56, vegetable products $4,854, mineral products $7,929, and manufactured products $3,059. Of these same classifications England furnished $3,014, $53,285, $4,473 and $202,696, respectively, and Germany $3,454, $203,679, $31,561, and $247,732, respectively.

The principal import was textiles, mainly supplied by Germany, which shipped $256,118 worth; England, $163,436; Lagos, $142,134, and France, $52,214.

The principal crude exports were grains and fruits, of which Lagos took about $500,000 worth and Germany about $250,000 worth. Nearly all the vegetable oils were shipped to France.

AUSTRALIA.

MELBOURNE CLEARING-HOUSE RETURNS—CHECKING FOREIGN VALUES.

Consul-General John P. Bray reports that the clearing-house returns of the city of Melbourne, Australia, for the year 1907 totaled $1,151,383,629, or an increase of $80,544,098 over 1906. The following table shows the clearances in Melbourne and Sydney, the two large cities in Australia, during the past five years:

	1903.	1904.	1905.	1906.	1907.
Melbourne	$811,213,419	$847,530,113	$913,113,195	$1,070,839,531	$1,151,383,629
Sydney	880,648,682	865,250,724	923,789,688	1,074,817,681	1,139,287,423

The government of Australia is endeavoring to make arrangements with the British Government by which, in return for a fee, the former government may utilize the services of the commercial attachés which it is proposed to appoint to the principal British consulates throughout the world, for the purpose of making special investigations as to foreign value of goods imported into Australia.

TEXTILES.

COTTON AND PRODUCTS.

MEXICO.

CULTIVATION, SEED-OIL PRODUCTS, MANUFACTURE AND IMPORTS.

Special Agent Arthur B. Butman, writing from Mexico City, describes the various branches of the cotton-textile industry in the Mexican Republic, including the growing of the fiber and its conversion into different marketable products. His report follows:

The principal cotton-growing section of Mexico is comprised in what is known as the "Laguna district," which includes the southern portion of the States of Chihuahua, Coahuila, Nuevo Leon, Tamaulipas, Durango, Zacatecas, and San Luis Potosi. In this district is produced probably 85 per cent of the cotton grown in the Republic.

Active efforts have been made to increase the acreage under cultivation, but such efforts have not resulted successfully. According to authorities familiar with the cotton-growing industry in Mexico, this is accounted for by various and somewhat conflicting reasons. It is claimed that the Laguna district is at present turning out about all the cotton that it can produce. Again it is claimed that the land is held in large tracts, and that the small cotton grower can not secure small areas for planting, while the larger growers do not enter into it to any great extent, except in the State of Coahuila. The cotton district is an irrigation country, and it is stated that, at the present time, all Government water concessions are taken up, which is another obstacle to would-be growers.

There are other portions of the Republic well suited to cotton cultivation, such as the States of Chiapas, Vera Cruz, Puebla, and Morelos, and the coast lands of the States of Oaxaca and Guerrero.

IMPORTATION AND CULTIVATION OF THE FIBER.

Mexico does not produce sufficient cotton for domestic consumption. In fact, it may be approximately estimated that the production of the staple in the Republic yields about one-half the amount required for use in her industries. Mexico imports annually a small quantity of Egyptian cotton for use in mercerized weaves. The exports of cotton from the United States to Mexico during the fiscal years 1905, 1906, and 1907 were valued at $3,768.126, $1,620,443, and $36,413, respectively. The noticeable falling off in these exports was largely due to the unusually favorable yields of the domestic-grown staple.

The experimental growth of Caravonica cotton, a staple of unusual length and quality, especially adapted to tropical localities, has recently been successfully undertaken in the State of Veracruz.

It is impossible at the present time to secure accurate official statistics of the acreage now under cotton cultivation in Mexico. The best cotton authorities, however, estimate the area for 1907 planted in cotton to have been 250,000 acres. The amount of cotton produced in the fiscal year 1903 was 80,779,901 pounds, valued at $3,939,989, United States currency, which is that used throughout this report, and in 1904, 121,062,106 pounds, valued at $7,858,521. There was a shortage in the yield for 1907, which is not expected to exceed 70,000 bales.

Cotton is planted in Mexico in March, the season of growth extends from March until June, and picking takes place from June until September. No fertilizers are used in the growing of the plant, although the consideration of their adoption is receiving the attention of the growers.

The fiber of the Mexican cotton is of good length and strength, thinner, however, than that of American cotton, less silky, and not so clean. The plant suffers from many pests, among which is the boll weevil, which is said to have been known in Mexico fifty years before it was found in Texas, and is supposed to have migrated thither. The "conchuela" is perhaps the most common pest, and of diseases common to the cotton plant, viruela, or cotton smallpox, is prevalent, and annually destroys large quantities of cotton. The Mexican Government maintains no experimental stations for cotton growth, but information on the best methods of parasite extermination is freely given by the Government to cotton growers.

BALING METHODS.

Mexican cotton is baled according to improved methods. The presses used are heavy, and the cotton is baled under pressure of from 3,000 to 4,000 pounds. There are no central presses in Mexico to receive the cotton from various gins. Each plantation has its own gin and press. Cotton is baled on the premises. Four or five laborers (peons) are employed to a baling press. Square bales are used, generally weighing about 500 pounds, and five 1-inch ties are used to the bale. The ties used are the standard arrow ties, 1 inch in width and 11½ feet long, and weigh 45 pounds to the bundle of 30 ties. They are manufactured principally in Monterey, and cost $1.35 per bundle. Buckles are used in baling, as in the United States. Gunnies are made of ixtle, the native Mexican fiber, and are manufactured in the cotton-raising vicinity.

Cotton is bought and sold by net weight in Mexico, and on the invoice a discount is made on the gross weight for the tare.

COTTON MANUFACTURING.

According to the latest complete annual industrial statistics, the cotton industry of Mexico in the fiscal year 1905 employed 30,162 persons, operating 678,058 spindles and 22,021 looms, and consumed 68,850,195 pounds of cotton in 128 factories during the year. I am informed that the increase in cotton manufacturing plants in Mexico since that period has been limited. Some few factories may have resumed operations, but others have been closed, so that the factories in operation to-day are practically the same, as regards numbers, as in 1905. There has been little increase in the production of cotton goods in the past few years, consequently the number of employees

at the various mills throughout the Republic at present is only slightly larger than for 1905.

The larger percentage of factories in Mexico are employed in the manufacture of cotton yarn and in weaving. Cotton colored tissues are manufactured in 17 factories, and there is at least 1 cotton underwear factory. The estimated sales for 1905 amounted to $25,404,784.

By far the larger number of factories are located in the central States, Puebla leading with 29 mills, in which are operated 113,000 spindles. The State of Vera Cruz contains 11 mills, and the most important cotton manufacturing company is found at Orizaba, which is said to own about one-fifth of the total cotton manufacturing outfit of the Republic. The mills in Orizaba are modern, up-to-date plants, complete in every detail—one of them is said to be one of the largest in the world—and of a size which will compare favorably with the cotton establishments in the United States. A good proportion of the raw cotton produced in Mexico is consumed in the mills at Orizaba.

COTTON-SEED PRODUCTS.

Cotton-seed products in Mexico are becoming more and more a commercial proposition. Many manufactories exist in various sections of the republic where the cotton seed is used; the chief products of which are soap, glycerin, cotton-seed oil, cotton-seed meal, and cotton-seed meal cakes. The cotton-seed meal is used, as in other countries, as a food for fattening stock for market.

At Gomez Palacio, in the State of Durango, is situated the largest factory using cotton seed in Mexico; soap, glycerin, and cotton-seed oil being here manufactured in large quantities. Such factories, of more or less importance, are found in many sections of Mexico, and the rapidly growing industry is fast becoming a prominent one.

The following statement shows the exports from the United States to Mexico of cotton-seed products during the fiscal years 1902–1907, and the exports of cotton-seed meal and cake from Mexico during 1902–1906:

Year.	Exports from United States to Mexico.		Exports of cotton-seed meal and cake from Mexico.	Year.	Exports from United States to Mexico.		Exports of cotton-seed meal and cake from Mexico.
	Oil.	Cake and meal.			Oil.	Cake and meal.	
			Metric tons.				*Metric tons.*
1902	$1,069,741	$967	8,235	1905	$892,751	$181	13,314
1903	1,068,335	247	8,738	1906	822,161	665	16,210
1904	1,176,996	2,858	9,871	1907	1,008,381		

LABOR, WAGES, AND WORKING DAY.

The wages paid in the cotton manufacturing industry in the various sections of Mexico differ considerably, averaging much higher in the northern States than in those States situated in the central and southern sections of the country. On the whole, however, the averages mentioned will be found approximately correct. About an equal percentage of male and female workers are employed in the cotton factories. Spinning operatives are paid by the piece, the earning capacity of each worker depending naturally upon their skill and speed. Monthly wages: Engineers, $37.50 to $75; stokers, $25 to $50; machinists, $37.50 to $50; storeroom employees, $50. Daily

wages: Reelers, carders, stretchers, and flyers, of both sexes, from 25 to 50 cents. One weaver usually attends to four looms, although the number of looms operated, in many instances, depends upon general labor conditions as well as on the proficiency of the weaver.

Many children are employed in the factories, it being estimated that child labor in the cotton mills of Mexico will average about 25 per cent of the total number of operatives employed. The children, both boys and girls, begin work at the age of 9 years, and are employed usually in the reeling department. They are paid, as a rule, from 20 to 25 cents a day, when they first begin work, and, as proficiency increases, this wage is advanced to 30 to 37½ cents a day.

The working day varies in the different sections of the country. In many of the States, particularly in those States where labor unions have obtained some growth, the hours constituting a working day are fixed at ten. In other sections, farther removed from business centers, and where there are more laborers and less work than in the larger cities, from twelve to fourteen hours constitute a working day. It should, however, be stated that in Mexico the midday rest, which is allowed to practically all employees of manufacturing and other enterprises, is two hours, which materially reduces the seemingly long hours of labor prevailing.

MODERN MILLS—OUTPUT OF FACTORIES.

The greater number of the cotton mills of Mexico are of modern construction and patterned largely after the mills of the United States and Continental Europe. As regards equipment, not only the mills of Orizaba, previously mentioned, but practically all the cotton mills in Mexico, are now equipped with modern machinery. Many of the mills have recently abandoned their old machinery for that of later and more modern design, so that it may be safely stated that practically all the cotton mills in the Republic are modern in equipment.

The United States furnishes about one-third of the machinery used in Mexico in the manufacture of cotton goods, the remaining two-thirds, as now employed, coming from England and Germany. The bleaching, dyeing, and printing establishments are usually of modern construction and equipped with all up-to-date appliances. Motive power is supplied by steam, water, and electricity. Steam is very largely used, but owing to the extension of electric power in nearly every portion of the country, electricity is coming more and more into general use and is gradually supplanting steam and water as a motive power for cotton manufacturing.

The quality of the Mexican cotton goods output is constantly improving. Not only the cheaper grades of cotton prints but many of the finer classes are now manufactured. The output includes cotton sheetings (bleached and unbleached), tickings, linings, drills, mezclillo (mixed gray cloth), shirtings, printed percales, Marseille quilts, cotton napkins, tablecloths, handkerchiefs, and cloths of mixed woolen and cotton. Knitted garments and fleece-lined underwear are manufactured, although this industry is in its infancy.

Unbleached sheetings are manufactured 1½ meters (meter=39.37 inches) in width and 28 to 30 meters to the bolt; domestic unbleached, 60, 65, 70, 75, and 80 centimeters (centimeter=0.3937 inch) in width, 25 to 30 meters to the bolt; bleached sheetings 1½, 1¾, and 2 meters in

width, 45 to 50 meters to the bolt; domestic bleached, 60, 65, 70, 75, and 80 centimeters in width, 42 to 50 meters to the bolt. Drills are woven 1 meter 60 centimeters wide, and in lengths of 45 meters; percales, 77 centimeters wide, in lengths of 35 meters.

The exports of cotton manufactures from the United States to Mexico during the last three fiscal years were as follows:

Description.	1905.	1906.	1907.
Piece goods	$270,143	$265,064	$267,695
Wearing apparel	278,944	285,406	324,395
Total	549,087	550,470	592,090

The consumption of British cotton goods in Mexico exceeds that of all other foreign countries. During 1906 the United Kingdom exported to Mexico the following: Piece goods—gray $59,863, bleached $809,879, printed $325,028, dyed or of dyed yarn $628,692, total piece goods $1,823,462; other than piece goods $1,507,604; yarn, $68,391; grand total $3,399,457.

CHINA.

EFFORTS TO EXTEND COTTON GROWING—UTILIZATION OF THE SEED.

In forwarding a report on the cotton-growing industry of China by Deputy Consul-General W. Roderick Dorsey, of Shanghai, Consul-General Charles Denby makes the following comments:

The determination of the Chinese to improve the products of their cotton fields, in which determination they are encouraged by the demand for raw cotton for manufacturing industries in Japan, must, if intelligently persisted in, affect the export of raw cotton from America to China and Japan. It is evident to the observant traveler that not only could the area devoted to the growth of cotton throughout China be greatly increased, but, with intelligent effort in the selection of seed and preparation of the soil, it could be made tc produce a better crop of fiber, more suitable to manufacture by modern machinery.

This tendency on the part of modern China to produce at home the commodities for which the Empire has heretofore relied largely upon foreign imports is manifest not only in cotton, but is marked in the increasing growth of wheat and the manufacture of flour, as well as in the production of iron and steel.

Mr. Dorsey's remarks as to the unsuitability of American machines for the removal of the small Chinese cotton seed and the consequent replacing thereof by English machines is commended to the attention of the American manufacturer. The increased production of cotton in China will necessarily lead to a greatly increased demand for cotton gins of the small hand-power variety, millions of which are now in use throughout this country and which are as a rule supplied from Japan. The whir of these small ginning mills is a familiar sound in every village in the immense cotton-growing district of central China.

Samples of ordinary Chinese cotton fiber and of that recently grown from American seed, together with some Chinese cotton seed

itself, are forwarded herewith. [Samples of these may be secured by business firms from the Bureau of Manufactures.] Mr. Dorsey's report follows:

EXTENT OF CULTIVATION AND YIELD.

Among the pursuits and industries of China the cultivation and manufacture of cotton is one of the most important. The heavy demand made upon the local crops by the mills of Japan and the many thousand spindles whirring busily in the Shanghai mills to supply an ever-increasing demand for native yarns, etc., demonstrates to the grower that a great acreage must each year be devoted to the production of this staple.

Actual figures as to the size and value of the yield, as well as the area now under cultivation, would be of value and great interest, but no reliable statistics on these points can be secured. It is conceded, however, that the area devoted to its growth and the value of the annual crop are exceeded only by that of silk and tea, cotton thus taking third place in the scale of agricultural products.

Figures as to the yield can only be estimated. The annual output of the mills is placed at 180,000,000 pounds a year. To this can be added with certainty the 110,000,000 pounds (including cotton waste) exported to foreign countries. Information as to the quantity of cotton used by the natives for padding clothing, bedding, etc., never reaches a statistician. Allowing only three-fourths of a pound of cotton to each of 400,000,000 inhabitants, 300,000,000 pounds more are accounted for, which, added to the preceding figures, gives a possible total production of 590,000,000 pounds per annum, the value of which at the average price of export cotton during 1906 would be $97,980,000 United States currency.

The country adjacent to Shanghai is the principal cotton-producing district in China, both for bulk and grade. Hankow and Ningpo are also important centers, but the quality is inferior to and the staple shorter than that grown in the Shanghai district.

STATISTICS OF EXPORTATION—USE IN LOCAL MILLS.

The following table gives the quantity, expressed in pounds, of cotton that passed through these ports during the past four years:

Port.	1903.	1904.	1905.	1906.
Shanghai	63,000,000	107,229,000	79,000,000	82,700,000
Hankau	44,300,000	53,300,000	33,800,000	19,200,000
Ningpo	15,500,000	16,800,000	11,900,000	14,000,000

Cotton ranks fourth in the list of products exported to foreign countries. The total exports for the last four statistical years is as follows: In 1903, 101,700,000 pounds; 1904, 182,000,000 pounds; 1905, 108,900,000 pounds; and in 1906, 109,500,000 pounds. Of this Japan took about 90 per cent, Germany 3 per cent, Great Britain 2 per cent, Hongkong 2 per cent, Italy 1½ per cent, the remainder being distributed between the continent of Europe, Russia, and the Orient, only a very small consignment, evidently samples, going to the United States. [A Boston commission firm writes to the Bureau of Manufactures that it has been making considerable importations of Chinese cotton from Liverpool.] In this connection it is interesting to

note that an effort will be made shortly to find a market in America for Chinese-grown cotton. The native staple being short and unsuited to the machines in use in American mills, it is not expected to compete with the home product for spinning. It is, however, well adapted for filling and short-end work, such as the manufacture of rugs, carpets, curtains, etc., and this is the market it is hoped to secure. That exported to Great Britain, Germany, and Italy is used principally for such work, and there is an increasing demand for it in those countries.

A large percentage of the staple remaining in this country finds its way to the cotton-spinning power mills, of which there are now 27 in China, actively engaged in turning out yarn for the native market. Chinese cotton is whiter than Indian and the product of the Shanghai mills is superior in color and cleanness to either Japanese or Indian yarn, but being shorter in staple it is not so strong nor is it so well reeled, owing to the low class of labor employed. The number of spindles in these 27 mills is approximately 750,000 and the production per spindle working day and night is from 11 to 13 ounces. Taking 12 ounces as an average, these spindles are capable of a daily output of 562,500 pounds, and on the assumption that work is carried on 320 days of the year, the annual output would be 180,000,000 pounds of yarn, a quantity equal to more than half the foreign import.

COTTON OIL MILLS.

In addition to the spinning mills referred to there are in China at least 10 cotton-seed oil mills located at Shanghai, Hankau, and Tungchow. I have seen no statistics as to the output of these mills or as to the quantity of oil consumed in China. Of the refined product, 1,186,000 pounds (value $29,000) were exported to foreign countries.

The seed of Chinese cotton is much smaller than the American, and American machines, especially the huller, do not give the best results. For this reason, I am told, the one foreign mill in Shanghai has recently replaced certain American machines with others of British manufacture. I understand an effort was made to have an American manufacturer adapt machines to the Chinese seed, but without result.

VALUE AND USE OF SEED.

The seed is also of inferior quality and worth from $11 to $13 per ton. Its yield is as follows:

Yield.	Per cent.
Crude oil	8
Cake	43
Lint	1
Dirt	1
Hull	47
Total	100

The crude oil loses 14 per cent in the refining process. The oil in its crude state is used for cooking and illuminating. In the refined state it is exported to foreign countries, principally to Australia, where it is used as an adulterant for butter and lard.

There is a considerable demand for the hull, which is used entirely for fertilizing purposes, and for which the Chinese farmer pays about

$2 per ton. The seed cake, which is also in good demand, is utilized for cattle feed, and is worth from $9 to $11 per ton. There is little demand for the lint. The dirt is also bought by the farmers for fertilizing purposes and brings about $2.25 per ton.

The native mills, operating native machinery, have proved profitable to their owners, and the one foreign mill in Shanghai, although in operation but a few years, has also proved successful. I have heard that a native mill in one of the outports has recently installed foreign machinery, and it is possible that others will follow suit. If the American mill manufacturer hopes to hold this market for this class of machinery he must be prepared to adjust his present models to the local requirements.

Considerable cotton seed is sent out of the country, principally to Japan. In 1905 the exports reached 87,960,670 pounds, valued at $443,650, while in 1906 they fell off to 82,108.700 pounds, valued at $417,850.

EXPERIMENTS TO IMPROVE STAPLE.

The Japanese, who are the principal buyers of Chinese raw cotton, are deeply interested in the betterment of the local product, and there is now a movement on foot which, if successful, will improve its grade to such an extent that we may look for a great falling off in the export of American grown cotton to Japan.

A Japanese firm, in close touch with the Government, began experiments last year at Kangwang, Province of Kiangsu, with cotton seed obtained from several countries. Seeds from India and Japan gave poor results. The American seeds, however, have produced a cotton greatly superior to the native. The staple is good, but the color, owing to heavy rains, is poor. It is proposed to repeat the experiments next season, using the American seeds developed at Kangwang, and should the grade not fall off the seeds then produced will be distributed free to the farmers.

The Japanese hope in this way to procure a cotton of American grade which they can purchase at a low price and lay down in their own country with small cost for transportation. This accomplished, American cotton will only be bought by Japan when her requirements exceed China's production.

SALVADOR.

COTTON MANUFACTURES DOMINATE THE MARKET.

In transmitting the following information concerning the dry goods trade of Salvador Consul-General Samuel E. Magill reports that, on account of the climate, silks and woolens are worn only by an insignificant part of the population, and that cotton manufactures are the only dry goods worthy of consideration:

The following information relative to the classes of cotton manufactures imported, and the countries supplying the same, was obtained by a canvass of the wholesale houses of this city (San Salvador):

Gray domestics are imported in about equal quantities from the United States and the United Kingdom, the price deciding as the product of each country has its advantages for this trade. This ap-

plies also to trade in gray drills, although at the present time almost all of the latter are bought in the United States.

The United Kingdom has the trade at present in white sheetings and lawns, as English manufacturers give greater latitude to purchasers in the matter of widths and quantities. Some local merchants believe English finish is superior to American.

American prints formerly held the market, but have lost it to the English owing to the great advance in the price of Americans and an increase in the Salvadorean tariff at about the same time. The import tariff is charged on weight, and the American prints, being heavier than the English, cost more to import. American manufacturers, declining to produce a lighter weight and give the variety in width and design offered by the English, have lost the trade, which has been secured by the Manchester manufacturers.

The market in drills seems open to competition, as local merchants buy from the United States, the United Kingdom, Germany, Italy, France, and Belgium according to personal preference. The impartial opinion seems to be that, while Italy, France, and Germany offer greater variety in style and design, the quality of drills from the United States and England is superior. In the gray drills the American are preferred, while in colors the United States and England secure about an equal share. Blue denims are almost all of American manufacture.

Yarns and thread are of English make, because the English brands are well known and the price is low. In the case of yarns the English hold the trade because of willingness to fill orders, however small, in any color or quantity and make packages in any size or weight desired by the purchaser. Laces are of English make exclusively, as are also fancy cotton dress goods. German blankets are preferred here to American, as the price is lower and a greater variety of design is offered.

SIDE LINES—POINTERS FOR AMERICAN MANUFACTURERS.

Almost without exception the importers of dry goods have side lines, most of them handling barbed wire, flour, oil, cement, galvanized iron, etc., and they also are extensive purchasers and exporters of the natural products of the country, such as coffee, balsam, indigo, hides, etc., so that it is quite safe to correspond with any of the firms in a list forwarded concerning trade in anything from cottons to cement and from thread to barbed wire. [List on file in the Bureau of Manufactures.]

Few local merchants have complaints to make about American packing or the American system of credits, the chief complaint being that American manufacturers do not seem to be sufficiently interested in securing the cotton-goods trade of the Republic, to make the styles the trade wants, and sell them in the widths and quantities desired by the local merchants.

American exporters of cotton goods to Salvador should note that the fractional currency of this country, as far as trade is concerned, does not contain "cents," although the Government coins them, the retail merchants refusing to accept or use them. Therefore the coins in use are 6¼, 12½, and 25 cents in value, and an increase of 1 cent a yard in the cost of a line of cottons in New York might necessitate an advance of 6¼ cents in Salvador, as there is no less coin multiple here.

This may cause the American merchant to lose the trade, for it is the universal experience here that the prices of English, French, and German goods do not fluctuate as do those of the United States, which seem to respond more quickly to, and be governed more completely by, the changes in the price of baled cotton as made on the cotton exchanges of American cities.

Competition between steamship lines from European ports to Colon gives European merchants a lower rate to Salvador than American merchants have from New York.

A railroad to connect the railway of Salvador with the line in Guatemala which runs to Puerto Barrios is contemplated. If it is constructed, it will give an impetus to local trade, as by that route a more direct access can be had to and from the markets of the world, for Salvador would then have the advantage of an Atlantic port which it does not now possess.

CARPETS AND TAPESTRIES.

FRANCE.

A PROFITABLE TEXTILE TRADE OF THE DEPARTMENT OF THE NORTH.

Consul Chapman Coleman, of Roubaix, reports that the Department of the North is one of the most important seats of the tapestry and carpet industry in France, to which he adds:

Its manufactures, in greatly varied forms and designs, are exported in large quantities to foreign countries, including the United States, and the methods by which this success is achieved might, in some features, be profitably studied by American manufacturers of such goods.

The prosperity of this industry is attributed by local manufacturers, in a large degree, to the preparatory instruction obtained by young men in the industrial schools situated in this district. The chief of these are: "l'École Nationale Professionnelle," at Armentières; "l'Institut Industriel du Nord de la France," at Lille; "l'École des Arts et Métiers," at Lille; "l'École Pratique d'Industrie," at Lille; "l'Institut Catholique d'Arts et Métiers," at Roubaix, and "l'École Industrielle," at Tourcoing.

TAPESTRY WEAVING.

There are in this district some 27 factories in which tapestry goods are manufactured, 11 of which are at Roubaix; others are situated in the neighboring city of Tourcoing and in the nearby towns of Lannoy, Chering, and Commines. The principal fabrics manufactured under this head are gobelins, hangings, table covers, upholstery for furniture, curtains, with handsome and rich designs in silk and mixed textiles; other special manufactures consist of a kind of oriental tapestry; panels, macassars, piano covers with imitations of oil paintings, and reproductions from photographs—often made to order from special designs submitted. The latter specialty has found large favor in England, the United States, and Canada.

It is claimed that these varied tapestry fabrics in a number of branches of art manufacture are hardly surpassed, if equalled in excellence, elsewhere. It would seem, however, that an exception should

be made in this regard in favor of the exquisite hand-loom products of high-warp tapestry, in woolen and silk yarns, as also in metals, such as gobelins, and of the low-warp tapestry, for which the National Manufactory at Beauvais, Department of the Oise, and the manufacturing establishments at Aubusson and Felletin, Department of the Creuse, are celebrated. Here, too, belong the beautiful tapestries in wool and silk of the factory at Nimes.

The products in tapestries of the looms at Roubaix, Tourcoing, and elsewhere in the Department of the North, are, owing to the economy secured in their manufacture by the prevailing, almost exclusive use of steam power, sold at remarkably low prices, except as regards certain classes of fabrics of high artistic merit, such, for instance, as decorative reproductions of paintings on "grosgrain" tissues, which, being much in vogue at present, command large prices; of these tissues, certain imitations of gobelins and flandres, the work of artists of talent, and executed with great skill and care, command high admiration.

CARPET PRODUCTION—LARGE SHIPMENTS TO AMERICA.

The carpet manufacturing industry in this district is one of the most important conducted anywhere in France in this branch of manufacture. There are 18 carpet factories, established on a large scale, employing 200 to 1,500 hands each, situated in the Department of the North, at Roubaix, Tourcoing, Lannoy, and Hem. Their greatly varied products, intended in a large measure for export, embrace moquettes, orientals, brussels, savonnerie, jacquards, axminsters, velvets, ingrains, oriental squares, rugs, etc.

The following classes of the manufactures of this origin merit special attention: In the first rank are the so-called knotted-pile carpetings, such as the savonneries, and most of those known as orientals; the moquettes, an intermediate fabric between short-piled carpets and oriental velvets. These moquettes, which are highly esteemed, were first made at Abbeyville, at as early a date as 1667, and soon thereafter at Aubusson and Amiens.

A veritable revolution was brought about in this industry in 1840, with the advent of the Wood mechanical loom, operated by steam. This loom was immediately adopted in the United States, but not until much later by French manufacturers, who suffered great loss at the time through this delay. But, though slow to change their methods, the French have, it appears, abundantly recovered lost ground, and now avail themselves of the most improved machinery. The employment at the present time in this district of the Jacquard mechanical appliance to looms in substitution for design cards, has greatly conduced to economy in manufacture. With the aid of this appliance, reduced in size, of which as many as 5 can be used on 1 loom, carpetings having a width of from 10 to 17 feet are readily manufactured and without repetition of the designs.

The direct export of tapestries and carpetings to the United States from this district amounted for the fiscal year ended June 30, 1907, to about one-half million dollars, while large quantities are also known to have found their way to American ports, indirectly, through shipments from England. Large and increasing numbers of the most expert operatives in this industry emigrate from year to year—to the great concern of their employers—to the United States, to seek and probably readily find employment at better wages.

BELGIUM.

ANTIQUITY OF THE INDUSTRY—EMPLOYEES AND EXPORTS.

In reply to an inquiry concerning Belgian textile industries, Consul-General Ethelbert Watts writes:

The weaving of flax has been carried on in Belgium from remote times. Flax cloth was woven in certain parts of Belgium in the time of Cæsar. Several centuries later Flemish drapers, especially those of Brussels, Ghent, and Louvain, manufactured woolen cloth which had a great reputation and was exported to France, Austria, and Italy. In the fourteenth and fifteenth centuries carpets and tapestry were manufactured in Brussels, Tournai, Ypres, and Audenarde. Since that time the Belgian textile industry has passed through alternate periods of prosperity and depression. The old manufacturing centers, such as Brussels and Louvain, have been deserted and the different branches of the industry have come to be associated with certain localities. For instance, woolen articles are manufactured at Verviers, linen in the two provinces of Flanders, and cotton goods at Ghent, Renaix, Mouscron, Braine l'Alleud, etc.

At the present time Belgium produces textiles of wool, half wool, cotton, linen, and linen mixed with cotton; hemp and jute textiles; and silk and half silk fabrics. Fabrics of pure wool or wool mixed with cotton are manufactured in 112 establishments, which employ 8,448 persons. The mechanical weaving of cotton is carried on in 61 establishments, employing 7,921 persons. In addition 2,800 persons working at home are engaged in the manufacture of cotton fabrics. White linen of all kinds is manufactured at Courtrai, Ghent, Iseghem, Alost, and Ruysbroeck. Damasked linen is especially manufactured by two important Belgian firms at Ruysbroeck and Ghent. The number of persons employed in weaving linen by machinery is 17,600.

The total value of textile fabrics exported from Belgium in 1906 was $4,957,398. The total value of linen exported from Brussels to the United States in 1905 was $569,481; and in 1906, $649,228.

THE CARPET INDUSTRY.

The carpet industry has almost completely disappeared from the Brussels district. The English have adopted the designs of the beautiful Brussels tapestry and introduced them to the trade as "Brussels tapestry carpets." The so-called Brussels carpets are manufactured in England and supplied to the Belgium market at prices much lower than those for which the same carpets can be produced in Belgium, for the reason that the English use modern machinery and manufacture in large quantities.

In 1889 there was but one small carpet factory in Tournai, which manufactured a velvet carpet, employing only 8 workmen. Since then the carpet industry has revived, and the Tournai factory is increasing its production. In 1891 an attempt was made to revive the carpet industry by employing the labor of the male inmates of the almshouse at Merxplas. This venture not only realized the anticipation of its promoter, but aroused interest which resulted in the establishment shortly afterwards of a branch factory at Westerloo. Imitations of Smyrna, Turkish, and Persian rugs were manufactured at Merxplas and at Westerloo. There were about 100 looms in operation in the two establishments. About 80 men, inmates of the

almshouse, were employed at Merxplas, without compensation; and about 100 girls were employed at Westerloo, who were paid from 20 to 25 cents per day. A few years ago the manufacture of carpets at Merxplas was discontinued, but the factory at Westerloo has increased its manufacture and now employs about 150 girls. The present annual output is from 1,500 to 2,000 large rugs and from 3,000 to 4,000 small rugs.

UNITED KINGDOM.

FACTORY OPERATIONS OF KIDDERMINSTER—EXPORT TRADE.

Consular Agent James Morton makes a report on the carpet trade of Kidderminster, from which the following is gleaned:

The first carpet factory was erected in Kidderminster in 1735. It is also probable that the firm which established it was the first to weave the "Kidderminsters," now chiefly made in Scotland, but the manufacture of which by power looms has recently been resumed in Kidderminster. There are now some 14 firms engaged in the weaving of carpets, and 2 in the worsted spinning trade. The textile industry, however, is not entirely confined to Kidderminster, but embraces 1 large factory each in the neighboring towns of Stourport and Bridgnorth.

Large quantities of carpets are exported to Canada, Australia, and New Zealand, and other British colonies, also to Brazil, and other States in South America; a small and insignificant quantity still goes to the United States. France, Germany, and Russia, also take some carpets, and agents from the principal firms visit nearly every part of Europe to solicit orders.

Kidderminster exported direct to the United States in 1906 less than $40,000 worth of carpets; statistics of exports to other countries are not obtainable, but it may be stated that the exportation of "carpets, not being rugs," from the United Kingdom was $4,751,937 in 1905, $5,465,468 in 1906, and $6,000,433 in 1907. The shipments to the United States from the entire Kingdom for the three years in question were $260,000, $430,397, and $262,349, respectively.

ASIATIC TURKEY.

TRADE COMBINE FORMED BY A NUMBER OF CARPET MANUFACTURERS.

Consul Ernest L. Harris, who previously reported that six of the leading carpet manufacturers in Smyrna were about to combine their interests into one large corporate company, now adds:

This has been accomplished, and since January 1, 1908, they have liquidated their several individual interests, and are now known as the Oriental Carpet Manufacturers, Limited, registered in the British consulate-general of Smyrna. This is the first time that a great combine like this has ever been organized in Smyrna, and it must be looked upon as an experiment, for the present at least, the success of which only time will demonstrate. Of course this new company does not include all the firms in Smyrna which do a carpet business. A large number did not join the combine.

CHINESE RUG MAKING.

DEVELOPMENT OF THE INDUSTRY IN LEADING CITIES.

Consul-General James W. Ragsdale, writing from Tientsin, says that the American people are scarcely aware of the wealth of China in all sorts of woven cloths, and more especially as to hand-manufactured rugs and carpets chiefly made in Tientsin and Peking, where 1,000 persons or more are employed in the production of rugs of all kinds of material, i. e., silk, sheep's wool, camel's wool, jute, hemp, felt, yak hair, and even the hair of the cow. Mr. Ragsdale forwards some samples and designs of these rugs, accompanied by an illustration and description of their manufacture:

A high upright loom consisting of large beams above and below, from which the warp is stretched, is used. In front of these several men and boys (from 1 to 10, according to the size of the rug) are seated, knotting into the warp tufts from balls of yarn hanging overhead, the design in color being so placed that each workingman can see it without difficulty.

Workmen are paid at the rate of from 20 to 40 cents Mexican per day (about 10 to 20 cents gold). One square foot is an average day's work. The industry has recently been introduced in several of the industrial schools for the employment of the poor. The silk carpets are very like those produced in India, Turkey, or Persia in colors and quality of material, but vastly different in design if left to Chinese selection. Foreign designs, if furnished, are faithfully copied.

These rugs differ greatly in quality. In some the warp is cotton, while in others the warp, as well as the nap or woof, is silk. Some are made of even surface, while in others the figures are raised. The quality also differs in the number of warp threads used to the inch, which varies from 12 to 20, as well as to the quality of the silk yarn. The cheapest are sold at from $1.30 to $1.50 Mexican per square foot, while the better qualities readily bring from $2 to $5 per square foot. The quality most in demand, however, ranges in price from $2 to $2.40 per square foot. They are made in all sizes and are made for floor, table, and piano covers and wall draperies.

WOOL FABRICATIONS—YAK RUGS RARE AND EXPENSIVE.

The wool rugs are in far greater demand and are largely used throughout China, Japan, and the East. Many are exported to Europe, and lately to America. They are made on the same loom and in the same manner as are the silk rugs. Those of all sheep's wool, with cotton warp, range in price from 40 cents to $2.50 Mexican per square foot, the size, design, and color to suit the taste of the purchaser. The wearing qualities of these carpets make them a very economical floor covering, and age softens and blends the colors, which are, in all reliable places of manufacture, of vegetable dyes.

The carpets especially favored by the local residents and tourists are made from camel's wool, the prices ranging from 25 cents to $1 per square foot. These rugs are heavy, and frequently are fully one-

half an inch in thickness. They are fashioned in all kinds of designs—floral, geometrical, and dragon.

The rugs made from the other materials mentioned (the yak excepted) are used only by the natives and range in prices from 5 to 25 cents per square foot. Those made from the hair of the yak are very rare and expensive, comparing in style and beauty with the finest silk rugs. They are made only in the interior provinces of China.

Rug making in China.

It is interesting to note the origin of the carpet industry in China. The method of manufacture was first used in making saddlecloths and trappings for horses used in processions and by Chinese of high rank, developing into the rug and carpet industry on the advent of the foreigner. The saddle blankets are still used, and often are highly finished in the most elaborate designs and patterns.

[Accompanying the foregoing report were samples of various designs and colors of Chinese rugs made from silk, camel's hair, and sheep's wool; also, 8 hand-painted patterns of rugs, which were obtained by the consul-general at considerable expense. These are all on exhibit at the Bureau of Manufactures. They will be loaned, in the order in which applications are received, only to textile manufacturers and textile schools.]

IMPORTATIONS OF BLANKETS AND RUGS.

PURCHASES OF THESE FABRICS AND COUNTRIES SUPPLYING THEM.

Consul Wilbur T. Gracey transmits from Tsingtau the following report regarding the importation of blankets and rugs in China:

Statistics show that a large trade in blankets and rugs is opening up in China which is continually increasing, and should serve as an outlet for American-made goods. The class of blankets which are most popular throughout Shantung, and North China generally, is a

light-weight cotton blanket which is being imported principally from Japan. These blankets appear in four varieties on the local Tsingtau market, as follows:

First quality cotton blankets, Japanese, measure 1.53 by 2.12 yards, and sell locally at retail for $1.10 Mexican ($1 Mexican=about 50 cents gold) each. They are packed in boxes of 100 pieces and no discounts are made unless purchases are made of unbroken boxes.

Second quality, measure 1.42 by 1.92 yards, are packed in boxes of 200, and retail at $1 Mexican, each.

Third quality, measure 1.31 by 2.18 yards, are packed in boxes containing 300, and retail at 56 cents Mexican, each.

Fourth quality, measure 1.4 by 1.92 yards, are packed in boxes of 300, and retail at 75 cents each.

The continent of Europe, principally Germany and the Netherlands, exports a large quantity of these blankets to China. During 1906 the total importation into this country was 954,135 pieces, valued at 486,626 haikwan taels (1 tael=83 cents gold), 302,321 imported from Germany, 312,700 from the Netherlands, and 117,296 from Japan.

MARKET DISTRIBUTION—WOOLEN GOODS.

Shanghai is the largest market for cotton blankets, where 275,705 pieces were imported in 1906. Newchwang followed with 246,219, while Shantung Province (through the ports of Tsingtau and Chefoo) consumed 128,899. Many of these imported at Tsingtau came through the Shanghai markets, and did not, therefore, appear on the Tsingtau statistics. Some, however, were imported direct by two firms [names on file with the Bureau of Manufactures], which are the largest dealers in this class of goods in this city.

In addition to the cotton variety, large numbers of woolen blankets and rugs are imported into China. British blankets are found in the local shops weighing 9 pounds and selling at $8, Mexican, per pair; a better quality, weighing 12 pounds, sells for $10, Mexican, per pair. American blankets are found in only one quality, weigh 12 pounds, and sell at $18, Mexican, per pair. They are considered the best, but the prohibitive price puts them outside the means of most purchasers.

Woolen blankets are usually white with blue, pink, or brown borders, edges bound with silk ribbon. A popular variety shows a plaid pattern over the entire blanket in pale blue or pink, and another is a light-brown blanket with colored border.

Woolen rugs are very much used, the most popular being of a rough black surface, resembling fur, with a bright yellow back on which a brightly colored figure of a tiger is printed, life size. They are known as "Lao hu" (tiger) rugs, and are sold by the thousands to the natives. A variety of the same rug has the black fur effect on one side, a bright magenta fur effect on the other, occasionally varied by a bright vermilion back. The backs of these rugs are invariably very bright and florid, sometimes showing bunches of bouquets of highly colored roses or other flowers.

SMALL AMERICAN SHARE—SELLING METHODS.

During 1906, 1,767,757 pounds weight of blankets and rugs were imported into China, the principal market being at Shanghai, the statistics of the customs showing that 595,034 pounds were imported

into that city. Shantung Province is the second largest consumer, 125,111 pounds having been imported through the two ports of Tsingtau and Chefoo. These blankets and rugs come principally from Great Britain, the imports from England (including Hongkong) having been 1,176,987 pounds during the year; 260,159 pounds were imported from Germany, and 287,204 pounds from Italy. The imports from the United States were so small that they were under 1,000 pounds and do not, therefore, appear separately on the statistics.

The blanket trade of China is valued at 1,192,213 haikwan taels, in which the United States has practically no share, and this notwithstanding the fact that much of the wool and cotton with which these goods are manufactured originates in the United States.

Most of the business is transacted through the regular piece-goods firms of the Far East, and the only way in which America could secure a share is by the manufacturers in the United States sending their personal representatives to China and, through American firms and American agents, compete with the business firms of Great Britain and the European Continent. The importation of blankets and rugs in China has increased enormously during the past three or four years, having nearly doubled since 1903, and most of this increase is due to the efforts on the part of German and Continental firms to cater to the wants of the Chinese people. A complete investigation of this market would well repay American manufacturers, who must cater to the existing trade.

MEXICAN DRAWN WORK.

DEVELOPMENT OF THE INDUSTRY ALONG UP-TO-DATE LINES.

Writing from San Luis Potosi, Special Agent Arthur B. Butman furnishes the following description of the textile drawn work of Mexico:

The product of perhaps no other domestic industry of Mexico is so well known in the United States as the Mexican hand-drawn work. Owing to the popularity of this work, it may be interesting to the American drawn-work makers and importers to obtain an idea of what drawn-work making means to-day in Mexico. The following brief résumé of the industry is therefore furnished. It is claimed that Mexican workers are unexcelled in the beauty of their product, either for intricate designs or fine workmanship.

The city of Aguas Calientes, capital of the State of the same name, may be considered the particular home of the drawn-work industry, although it is carried on in many other portions of the Republic. At Aguas Calientes it is the sole occupation of a large percentage of the female population, both women and girls. The commercial value of the work was practically unrealized until about twenty-five years ago. At that time the drawn work was an occupation of women of the poorer classes, who possessed patterns which had for a long time been successively handed down in the same family.

SECRECY GIVES PLACE TO MODERN INSTRUCTION.

These patterns or designs were jealously guarded. The work was crude. In many of the old designs the lack of a proper idea of con-

struction is plainly evident. Commencing in one corner of the cloth square the worker proceeded to work around the square irrespective of the pattern, and when the ends met a discrepancy in design naturally resulted. The work was fringed but not buttonholed, and the edges were consequently uneven. These imperfections may doubtless have been the outcome of copying designs again and again by those who had never been systematically taught until the original perfect form was lost. In the modern pieces the difference is at once noted. The improvement in the modern drawn work over the old is largely due, first of all, to the energy and untiring efforts of a certain philanthropic American woman who became interested in this Mexican work and the woman workers of Aguas Calientes.

First these women were taught to do buttonhole stitching, later they were shown how to make a hem, and to hemstitch. It was then demonstrated to the workers that it was possible to inaugurate a system in the work, as well as in the design, and that by counting the threads—since the process of the work is first to draw the threads, then stretch the cloth in a wooden frame and afterward weave in the design with a short, fine needle—they would be able to make the design fill the square with uniformity.

Systematic and intelligent teaching followed, until from the straight work on pillowcases and napkins the women became able to accomplish the elaborate designs which are now for sale not only in Mexico, but are exported in considerable quantities to the United States. The work was also taught in the schools for girls. More or less difficulty was experienced in an endeavor to convince the workers of the practicability and personal advantage of working collectively and outside their own homes. For some years the women refused to do this; latterly, however, they have consented to go to localities where the rooms are of a size to enable them to work on the larger pieces, such as bedspreads and tablecloths, which can not be made in their small dwelling rooms. The greater part of the work supplied to local dealers is usually performed by contract, and it is said that the workers average an approximate daily wage of from 15 to 25 centavos (centavo=one-half cent American currency). Each person works on one design only. The linen used is practically all of Irish manufacture.

ENTIRELY A HOME INDUSTRY.

So characteristic is this particular handiwork of the country that articles with drawn-work designs are universally found in Mexican homes, from the square of coarse cotton thus embellished, covering the dinner basket of the poor, to the finest of linen tablecloths, exquisitely wrought, on the table of the wealthy. No accurate statistics either of the number of persons employed in the industry or of the value of the output are obtainable. To ascertain the former would be a difficult matter, the industry being, as stated, entirely a home one, but it is estimated that the latter reaches about $1,500,000 Mexican ($750,000 American) annually for the State of Aguas Calientes alone. This estimate is based upon the amount and valuation of the linen used in manufacture of the articles.

Large quantities of Mexican hand-drawn work are annually purchased in this country by tourists from the United States, the value of which is not known. Consul W. D. Shaughnessy at Aguas Calientes states that there was invoiced at his consulate as exported to

the United States drawn work to the values of $10,000 for 1906 and $7,000 for 1907.

[Blue print illustrations and a catalogue showing designs of drawn work now being manufactured in Mexico were forwarded by the special agent, and may be seen at the Bureau of Manufactures.]

ITALIAN SILK MARKET.

DEPRESSED CONDITION OF THE INDUSTRY IN JANUARY.

The following report, covering the world's supply of cocoons and raw silk and the condition of the silk industry of Italy, dated January 31, 1908, is furnished by Consul James E. Dunning, of Milan:

The month of January has been regarded at Milan, the center of the Italian silk trade, as an exceptionally critical time, during which tendencies which began to manifest themselves late in 1907 and causes reflected from events both in and out of the market in the late autumn of 1906 would come to some sort of a definite head, indicative of their final effect. In so far as these conditions have approached anything like a conclusion, January has been a month of stagnation and broken prices.

For the last three months of 1907 prices fell off heavily from those of similar periods in 1906, though it is true that they remained higher than they were in either 1905 or 1904. At the end of December there had been a drop of about 12½ per cent from the market prices of 1906 at the corresponding date. January at Milan opened with this recession going steadily toward a lower figure, and until the middle of the month the movement continued. By the 20th the receding prices had lost about 30 per cent from the level of 1907, and there remain (January 31, 1908).

Many spinners who closed down their mills at the end of 1907 have not reopened them and are giving no promises of so doing. Others have opened on half time since January 15. Most of the January business was devoted to orders and to certain small lines for which the domestic market offers a more or less steady demand under all conditions. Such orders as came in—and on account of conditions outside of Italy, particularly in the United States, these were small in number—were accepted at prices and terms which served to unload a certain amount of overstock, but which had a disadvantageous effect on general market prices. The special halt in the movement of those weights of raw silk which form the bulk of the extensive trade with the United States rather glutted the home market in these qualities. This phase of the situation can best be shown by the statement that where this consulate had certified to the shipment of 1,273 bales of raw silk in January, 1907, the number of bales certified in January, 1908, was only 568. Nothing so well illustrates the present state of things between Italy and its foremost buying market.

A bulletin issued by one of the trade organs on January 31 stated that it was felt the last word had not then been said as to the low mark of prices, but that a rapid betterment of things was looked for in the United States.

SUPPLY OF COCOONS AND SILK—PRICES OF SILK WASTE.

During January the cocoon market was slow and presented a gradually falling scale of prices. The Milan Silk Association re-

ported that the total world's supply of cocoons early in January was 8,239,193 pounds—the largest stock reported in five years—against 4,869,253 pounds at the beginning of 1907. The report of the world's supply of raw silk, including Italian, Chinese, and Japanese, for January, 1908, shows a total of 6,655,072 pounds, against 3,239,055 pounds in January, 1907. This vast overstock, when connected with trade conditions, can not be said to be favorable to the outlook.

The Silk Association and the Association of Silk-Waste Spinners have had long arguments in an effort to fix on a stated price for waste as a basis for future market conditions in this important article of shipment. The spinners, during January, presented an ultimatum, with a flat price of 66 cents per pound for raw silk waste, to apply to all visible supply of waste in this market. The Silk Association also arranged to market the entire visible supply of "recotti," the last refuse of the manufacture of silk waste, to a French buyer at 14 cents per pound.

Sales of spun silk waste for January were fairly good, and the outlook in this branch of the trade is regarded as moderately good, though prices have suffered along with those in all other branches of the industry.

SILK TRADE WITH RUSSIA.

The alarm created in Italy by the proposal of the Russian Government to place a prohibitive import duty on raw silk has been allayed by the negotiation of the new commercial treaty which leaves that valuable market still open. The Russian proposition contemplated a sliding tariff, beginning at nearly $10 per quintal (220.46 pounds), about 13.8 cents per pound, on the date of the going into effect of the new law, and increasing during the next following five years to nearly $100 per quintal (41 cents per pound).

The new import tariff arranged by the treaty is equal to 11⅞ cents per pound on Italian raw silk, or between 2 and 3 per cent of its average value. This is satisfactory to the Italian trade. Further provisions of the treaty will allow the free importation of cocoons into Italy from Russia, an important point.

Large quantities of silkworms and cocoons are brought into Italy from the Russian possessions in the Caucasus and Turkestan, while it is claimed by competent Italian authorities that as much as four-fifths of the silk imported into Russia is provided exclusively by Italy. Careful calculations made up in Milan estimate the value of silk exports to Russia in 1905 at $7,500,000.

SWISS RIBBON INDUSTRY.

METHODS FOR WEAVING, DYEING, AND FINISHING.

Consul George Gifford furnishes the following information concerning ribbon weaving and its allied industries—dyeing, finishing, and printing—in the Swiss city of Basel and surrounding districts.

Ribbon looms were restricted to weavers' dwellings until the steam engine, in 1840, brought the factory system, although the house industry still remains the most interesting branch of the business. In 1880, when nearly all the great factories were built, out of a total of 7,000 looms 5,000 were in the houses of the peasants of the adjoining country districts, and it is estimated that that proportion holds good

to-day. The peasant weaver finds a remunerative and most welcome additional occupation at the loom for the leisure hours of himself and family, especially in winter, when his farming no longer engages his attention. The loom is furnished to him by the great Basel manufacturers, who also send him, by special messengers, the silk already warped, the shoot or woof wound on bobbins, and collect the finished ribbons, all without charge to him.

The peasant weaver has seen within a few years a complete and agreeable revolution in his trade through the use of electricity as the motive power of what can no longer be called the hand loom. To the village cottage and the lonely farmhouse the wire now brings power and light from the works on the Rhine, at Rhinefelden, and the weaver is thus enabled to employ all except quite small members of his family in an occupation which no longer requires any physical effort, but only intelligent attention.

The closely allied subsidiary industry of silk dyeing enjoys one great advantage which has, perhaps, indirectly helped the ribbon business of Basel in its competition with its European rivals, St. Etienne and Barmen. This advantage is the special quality of the water, which is declared to be of prime importance in dyeing—so important that orders for work are received from distant points in Europe in cases where the most satisfactory results that can be attained by the dyer's art are required.

OUTPUT—EMPLOYEES—MANUFACTURERS.

Basel has doubled in population within thirty years and now contains 130,000 people, but the ribbon business has not kept its relative rank as decidedly the leading industry of the little canton. The ever-growing tariff wall of the neighboring States and the forced establishment of factories on their territory by Swiss manufacturers—at Ludwig, Alsace, at Grenzach, Grand Duchy of Baden, and at Bregenz, Austria—has somewhat checked its growth as a strictly local specialty. The competition of Barmen, with its cheap ribbons, has also had its effect, while the enormous production of the better all-silk goods in Paterson and other American towns has much reduced the export to the United States. But there are still employed in the ribbon industry proper about 13,000 people, as stated by the secretary of the Basel chamber of commerce. To this number should be added 1,200 persons engaged in the associated and dependent industries of dyeing, finishing, and printing.

There are now 15 Basel ribbon manufacturing firms and corporations, from whose offices in this city not only the local factories but the numerous establishments in Germany and Austria, as well as the very extensive house industries of the Jura, are directed. All are large and solid houses, in many of which representatives of the families of those who founded them centuries ago are still active.

The average output of ribbons manufactured by Basel firms on Swiss soil may be taken as having a value of $8,000,000, seven-eighths of which is exported. At the present time England is by far the best customer. The value of ribbons declared at Basel for export to the United States during the fiscal year ended June 30, 1906, amounted to $1,035,548 and during the calendar year 1906 to $821,588.

WOOL TRADE.

AUSTRALIA.

INCREASED SALES—ANTICIPATED DECREASE IN PRODUCTION.

Consul-General John P. Bray sends from Melbourne, under date of December 21, the following review of the Australian wool trade:

The last wool sale in Australia for the year 1907 was held on December 20 and was very firm for the best merino, comeback, and fine crossbed. The following table shows the total offerings and sales (which are by auction) of wool, in bales, in Australia from July 1 to December 20, 1907, compared with those of the previous year:

	1906.		1907.	
	Offered.	Sold.	Offered.	Sold.
Victoria	297,966	285,179	353,653	318,573
Sydney	368,837	368,266	433,000	385,000
Adelaide	109,304	102,396	121,157	109,020
Brisbane	53,007	47,016	67,605	57,813
Total	829,114	802,857	980,415	870,406

The increase in sales is thus about 68,000 bales, as compared with the sales to the end of 1906. The following is an estimate compiled from trustworthy figures of the number of bales likely to be offered for sale during January and February, which will practically close the season, compared with the same two months in 1907.

	1908 (estimated sales).	1907 (actual).	
		Offered.	Sold.
Melbourne	51,000	123,809	130,692
Geelong	19,000	25,045	25,230
Sydney	180,000	280,201	266,674
Adelaide	2,000	2,315	2,693
Brisbane	15,000	10,285	9,585
Total	267,000	441,655	434,874

It is anticipated that the season will end with a decrease in the production of about 120,000 bales in comparison with last season.

ASIATIC TURKEY.

REACTION IN THE SALES MARKETS OF ASIA MINOR.

Consul Ernest L. Harris supplies the following report on the wool trade of the Turkish port of Smyrna:

The wool which reaches the Smyrna market is produced in Angora, Karahissar, Pergamus, and Cassaba. Shearings take place twice a year between the months of April and September. I have heard the statement made in Smyrna that if it were possible to introduce into Asia Minor and maintain some system of washing which would tend to refine the quality now produced, this country would be one of the best woolgrowing regions in the world. However, Anatolian wool is a very much sought after article in every market.

The crop for the past year was about the same as that of 1906. Prices opened very high, and shipments were brisk, until financial difficulties occurred, both in Smyrna and abroad, when absolutely no orders could be obtained. Stocks rapidly accumulated, and prices went down to an unheard-of limit. The action of the Smyrna banks in limiting credits and raising the rate of interest at the same time to 9 per cent on all loans forced holders to deposit their stocks in the banks' depots. But even at the present low prices there is no demand from America, at least for the time being.

During 1907, $199,711 worth of wool was invoiced at this consulate for the United States.

TOWELS IN CHINA.

STEADILY GROWING PURCHASES OF THIS TEXTILE ARTICLE.

The following report regarding the importation of towels into China is transmitted by Wilbur T. Gracey, consul at Tsingtau:

Tsingtau is the largest importer of towels in China, and during 1906 140,625 dozen honeycomb and huckaback towels passed through the customs at this port. The total importation of this class of towels into China amounted to 752,469 dozen during 1906, in addition to 924,024 dozen of other varieties. Of the huckaback, 231,957 dozen were supplied from Japan, which country also exported to China 627,233 dozen of other varieties of towels and toweling. Great Britain supplied 232,278 dozen and Hongkong (probably originating in Great Britain) 193,104 dozen of the huckaback quality, and of other kinds Great Britain supplied 233,732 dozen.

It will be seen by these statistics that the Chinese people are becoming large buyers of the cheapest quality of foreign towels. The varieties found on this market are mostly small, selling at retail at 10 cents Mexican (about 4½ cents gold) each, or from 90 cents to $1 Mexican ($1 Mexican equals 45.3 cents gold) per dozen. The entire Province of Shantung appears to have been supplied through Tsingtau. Several Chinese and two or three German firms are interested in the importation, the former making their purchases on the Shanghai market and the latter importing direct from Japan or Europe. The British variety of towel sells at a slightly higher price (15 cents each), is somewhat larger, and of a thicker and better quality. The demand for this class of goods and the importation from Japan has increased enormously during the past few years. The importation from Japan in 1903 of the huckaback variety was 63,395 dozen, which in 1906 increased to 231,957 dozen, while the imports of other varieties have increased from 273,118 dozen in 1903 to 627,233 dozen in 1906.

While it would probably be impossible for American manufacturers to compete with the Japanese on the cheaper grade of goods, owing to the advantages of Asiatic labor and nearness to the market, yet as regards the better qualities supplied by the British mills there should be an excellent opportunity for competition. There is a call for cheap toweling in China and by catering to the wants of this trade Americans can certainly secure a portion thereof.

NEW HEMP MACHINE.

EQUALLY EFFECTIVE IN SCUTCHING MANILA AND SISAL FIBERS.

Consul Thomas H. Norton, of Chemnitz, writes as follows concerning the new hemp machine which has been recently invented in Germany:

A German engineer has recently designed a scutching machine which can successfully replace the current manual operations and not only substitute mechanical power for human effort but preserve uninjured the finer fibers. The machine has been constructed by a prominent firm [address recorded at Bureau of Manufactures] at Magdeburg, and recent experiments have been conducted upon Manila hemp grown in German botanical gardens. The results have been so satisfactory that the constructing engineer is about to proceed to German East Africa with the machine and test for several months its full adaptability under colonial conditions.

The Musa textilis, of the Philippines, has been introduced into German East Africa and flourishes there, but botanists have found that the Musa ensete, which yields a fiber fully equal to the famous Manila hemp, is indigenous to the colony. The only difficulty encountered in this connection with the development of this tropical industry has been the lack of suitable machinery for the scutching or liberation of the fiber from the soft parenchyma which incloses it and from the tissues of the bark.

The operation of scutching as practiced in the Philippines is of the most primitive nature. The crude process of rubbing, beating, and shaving used in the Islands gives fairly good results, as far as the production of the coarser grades is concerned, but it is destructive of the finer and more delicate fibers, not only of the Manila hemp plant, but also of several other monocotyledons, particularly of the pineapple, the leaves of which yield a choice grade of fiber.

The invention is also adaptable for the sisal hemp of Mexico, the economic importance of which is increasing steadily.

The details of the new scutching machine have not yet appeared. Undoubtedly the invention will be of much importance in the evolution of Philippine agriculture and industry.

FORESTRY PRODUCTS.

LUMBER TRADE.

PERU.

DESCRIPTION OF A SUCCESSFUL SAWMILL IN THE IQUITOS REGION.

In a previous report Consul Charles C. Eberhardt, of Iquitos, referred to the field that exists in the Peruvian part of the Amazon Valley for the establishment of a lumber business, sawmill, etc., and also to a certain mill, within one day's journey of Iquitos by launch, which had been unusually successful. The consul now makes the following supplementary report:

The machinery used in the mill referred to could by no means have been called first class. This same mill has undergone considerable improvement during the past year, and while there are in all

Interior of sawmill, near Iquitos, Peru.

five mills of different sizes situated at various points along the river within a few hours' trip of Iquitos, this is the only one which can be said to be dependable, in a business way, the others running only at irregular intervals, chiefly because of inability to secure labor, either skilled for the machinery, or unskilled for felling the trees, etc.

This mill, together with the carpenter shop (or planing mill), storage shed, tracks, dry kiln, etc., covers approximately 3½ acres

of ground. The buildings are made of a framework of rough native timber, covered with roofing and siding of corrugated iron. The machinery in the mill proper includes two vertical saws, two circular saws, one band saw, winches, a 28-horsepower engine and other necessities of such an establishment, all of German or French manufacture, while that of the planing mill, including jointer, planer, band saw, circular saw, a 60-horsepower engine, in fact almost everything that goes to make up a first-class planing mill, has come from the United States, and the work is in charge of an American machinist with an American assistant. The dimensions of the sawmill are approximately 100 by 200 feet, the planing mill 40 by 115 feet, and the storing shed 40 by 80 feet.

OPERATIONS OF THE MILL.

I am informed that the original tract of land, of some 2,000 acres (all timber), and the improvements to date, have cost approximately $250,000 United States currency, a good share of the profits of nearly every year having been immediately reinvested in improvements, and while the owner has always earned a good percentage on his investment, he states that he has also lost very heavily at times, through lack of knowledge of how such a business should be conducted; that he has paid dearly for his experience, but that now, after having spent during the past year approximately $55,000 on improvements, he feels that he is in a position to reap big profits, having cleared something like $19,000 United States currency during that time, even after having undergone all the expense referred to.

While the other mills will naturally secure some of the business and may at some time in the future compete successfully, at present this one manufacturer may be said to have almost a monopoly of the lumber business. The mill has a capacity of about 6,000 feet per day, and as the demand for lumber is always in excess of the supply, the manager finds a ready market for all the output of the mill, though for several causes, chiefly scarcity of labor and logs, running daily at full capacity is rendered impossible.

As the rivers are depended upon entirely as a means of transporting the logs to the mill, only the timber near the streams is cut and later rafted downstream to the mill. Even on the tract belonging to the mill property, aside from logs that can be handled with a winch or windlass and cable from the nearby mill, only such trees as grow near the river have been cut down.

SUPERIOR RAFTING FACILITIES.

The mill also does a general jobbing business, and persons needing lumber raft their logs to the mill, where they are cut into the dimensions desired, the mill owner receiving in payment, one-half either of the logs in the rough, or the finished product. These logs are sometimes brought from great distances up the Ucayali River, and the methods employed by the men in their transportation are of interest. Usually 50 to 60 logs are securely rafted together with small poles and vines, and in charge of four men they are started downstream. A sheltering roof of thatched palm is built on the raft as a protection from both the sun and rain, and on this raft the men cook, eat, and sleep, using dugout canoes for excursions to

land when a house is passed, and a supply of provisions, such as bananas, yuca, and rice, becomes necessary.

As the current is not very strong, the men have very little to do, and their experience is not very exciting, in fact, it becomes monotonous except for the occasional necessity for crossing the stream or getting the raft out of one of the "remolinas," huge whirlpools, which abound in the river, one raft having been caught in one of these and whirled in a large circle of approximately one-fourth of a mile in circumference for nearly a day before the united efforts of the men, working hard with huge and rather unwieldy oars, could extricate it.

Usually several such rafts are started downstream at the same time, and when within a few hours of the mill all but one are made fast to the bank, and all the men join in bringing this one raft to the mill. The men then return in canoes and bring another raft down, until, one by one, all the rafts are anchored safely in the river port at La Puritania, no raft ever yet having been lost.

In my report of a year ago the statement was made that "at present there seems no industry in this part of Peru where such profits can be made on comparatively small investment as a planing mill run by practical lumbermen along up-to-date lines." In view of the difficulty in securing labor, and the changed conditions in general under which one must work, it is well to repeat the advice always given to inquiries received at this office from persons in the United States regarding conditions in this region, that no northerner should ever think of investing money in tropical South America without first having made a careful personal investigation of local conditions, or having received a report thereon from a source known to be absolutely worthy and reliable.

ITALY.

DEPLETION OF ITALIAN FORESTS—SALES FROM THE UNITED STATES.

Clerk Michael Siersdorfer, of the Milan consulate, in answer to many inquiries received from numerous lumber and furniture wood firms in the United States, reports as follows:

In consequence of the annual decrease of Italy's supply in all kinds of building lumber and hard furniture woods, she must import them from almost every available country. Nearly all her wood building material is imported. Stone and brick are universally used in construction, and in the larger cities the erection of frame structures is forbidden by law. There is, however, a strong demand for imported dimension lumber for the beaming of roofs and so forth, while the furniture trade calls for a constantly increasing supply of special stock. The height of buildings being legally limited to five stories, there is every disposition to use wood whenever possible instead of steel, and steel framing is entirely unknown. Building is going on very rapidly throughout the Kingdom, and the industrial outlook is such as to promise an unabated demand for timber during the next twenty years. As Italy is entirely without native forests and an immense amount of wood must be imported during this period, opportunity is suggested for the American exporter.

There is evidently no field for American hardwoods used in the manufacture of furniture, as they are deemed too expensive by the

Italian furniture builders and can not compete with hard furniture woods, of various qualities, imported into Italy from all over the world through English, French, and German brokers. Ash is imported from the United States by the Italian Government to be made into cars for the royal navy. Small and irregular shipments of satin walnut, mahogany, ebony and cedar are also imported from the United States through English brokers, but, on account of high prices, the Italian furniture builder will substitute for them cheaper native or foreign woods wherever possible.

COMPLAINT AGAINST AMERICAN SHIPMENTS.

The Italian trade reports great dissatisfaction with recent American shipments. If this continues, according to Italian lumber experts, the trade between the United States and Italy will gradually die out and Italian builders will be compelled to attempt replacing the once satisfactory American stock with some other native or foreign wood, of better quality, cheaper price, and more readily procurable. A very strong point which led to the creation of the American trade was the large dimensions of the stock, in varied contrast to European lumber. Italian importers say that of late the American shipments have entirely lacked this distinctive quality, which was the reason for bringing them here at all.

The importations of lumber, etc., into Italy during 1906 were valued at $18,796,222. During the month of January, 1907, the imports of lumber from the United States into Italy amounted to 10,441 tons of a value of $178,847.

A HIGHLY DEVELOPED PIEDMONT INDUSTRY—TERMS OF SALE.

Consul Albert H. Michelson supplies the following from Turin:

Satin walnut and pitch pine are the two American woods most used in this consular district. Nearly all other woods are imported from Austria and the Tyrol, with fir pine first in importance. The making of furniture and fine woodwork is a highly developed and important industry in this district (Piedmont) and the very finest woods are widely used.

Terms of sale are usually thirty days after shipment to houses that accord 2 per cent off against such terms. A number of American exporters insist upon cash against documents, but there is no doubt that their business suffers thereby and that, other things being equal, the American house which offers the most favorable terms does the most business. Long credits are customary in Italy and obtain both among exporters and importers and are usually sound.

LACK OF TRANSPORTATION FACILITIES TO SICILY A DRAWBACK.

Vice-Consul Jacob Ritter writes from Catania as follows:

Hardwood is used here only in limited quantities and it would not be easy to develop an important trade in this kind of lumber. The bulk of lumber comes from Austria. It is seldom that steamers arrive from America which will load goods for this city, without transshipment at Genoa, Naples, or other places, unless the quantity amounts to 4,500 tons. This makes the freight and other charges so great for small lots as to render the importation difficult and even impossible.

GERMANY.

BUILDING INDUSTRIES CONSUME LARGE QUANTITIES OF WOODS.

Consul-General A. M. Thackara, of Berlin, states that Germany uses large quantities of hard and fancy woods in the building and furniture industries. He continues:

For building purposes by far the greater part is used in parquet floors and but little on walls or ceilings. The cheapness of labor and high price of lumber make decorated plaster walls and ceilings most popular. In the furniture industry much of this fancy wood is used in the construction of tables, desks, and cabinets. The present source of supply of this sort of lumber is East Germany, Russia, Austria, Scandinavia, and America.

Hamburg is the great lumber market for Germany, and practically all imported lumber passes through the hands of the big dealers at that place.

This consulate-general at all times strongly recommends to American exporters the importance of all literature and correspondence to German houses being in the German language. Long time is the rule on sales. When the goods arrive in Hamburg the importer deposits his note of sixty or ninety days with a banker in payment for the goods.

AMERICAN METHODS INJURIOUS TO BUSINESS IN MAGDEBURG.

Consul Frank S. Hannah, writing from Magdeburg, states that the outlook for the importation of American lumber into his district is not very favorable on account of the previous actions of certain lumber exporters in not living up to their contracts in the past. He adds:

In a personal interview with one of the largest lumber importers in this district, he gave me information concerning a previous experience of his, as follows: A year or so ago he had occasion to place a large order for American lumber to be cut in a certain way and after certain measurements suitable for the particular job for which it was ordered. After the acceptance of the order by the American firm, conditions arose whereby they did not care to ship the lumber, but after many letters and several cables they forwarded a shipment which did not correspond in any way to the one ordered and thereby caused the importer great inconvenience and additional expense in having the shipment resawed to meet his requirements. The result of this unbusinesslike procedure on the part of the American firm has so antagonized the importer that in his present state of mind he declares his unwillingness to accept a shipment of American lumber as a gift.

It is unfortunately a fact that many American firms only seek foreign trade when the occasion is forced upon them by lack of demand in the home markets, and when orders are placed with them, should a change in conditions enable them to sell the same merchandise in the home market, they refuse to ship. This, of course, as any good business man knows, does more to injure the growth of foreign trade than anything else. Germany should be a good market for American lumber; wood is very scarce here and very expensive and consists almost entirely of pine, but it will take painstaking and

well-directed efforts to overcome the effects produced by such proceedings as mentioned.

INLAND TRANSPORTATION TO PLAUEN ADDS TO COST OF MATERIAL.

In response to an inquiry from an Ohio lumber company concerning the imports of American woods into Plauen, Consul Carl B. Hurst says:

At present there is no stock of American woods kept here. Sometimes American pitch pine and red pine are used in this locality for flooring, and Carolina pine for doors, ceilings and furniture; white pine is used in making wood patterns, and occasionally California red wood and yellow pine are called for in the trade. The dealers here cover their needs in American woods generally from wholesalers in Hamburg.

It would be a great advantage to quote prices c. i. f. some German seaport, as the ocean freight would be a rather uncertain quantity to the dealers in this inland town desirous of importing for the first time. The distance of Plauen from the large ports would be the greatest drawback to an extensive purchase of American woods, so that the cost of transportation would have to be very carefully reckoned.

NICARAGUA.

LITTLE DEMAND FOR NEW BUILDING MATERIAL.

Consul Frederick M. Ryder, of San Juan del Norte, writes that there is little demand for manufactured lumber on the Atlantic coast of Nicaragua to-day, local trade conditions being as follows:

In the interior a limited amount is consumed, some of which is prepared there. The foreign product used is from the United States. Some years ago, when business was in a flourishing condition, the lumber trade between New Orleans and Mobile and this coast was extensive.

In Bluefields the business activity anticipated at the time the city was rebuilt has thus far failed to materialize, and as a result many of the spacious warehouses built at that time are still unoccupied, and other buildings are rapidly decaying for lack of necessary repairs. The owners have become disheartened by the continued business depression and consequent lack of income from their real estate investments.

In San Juan del Norte there has not been a building of any kind erected during the past ten years in the construction of which new material has been used. When a new building is contemplated the design is adapted for the utilization of old lumber from unoccupied houses and bodegas, even though the dimensions of the building thus planned may not exactly suit the purpose for which it may be required. Building material is both scarce and expensive in this section.

RAVAGES OF CLIMATE AND INSECTS—A NATIVE SAWMILL.

Pitch pine is the only serviceable and durable lumber for use in this locality; soft woods will not withstand the constant dampness or the ravages of ants and other insects. Shingles have not been used

here for some years, as the rain and hot sun destroy their usefulness. Roofs which had been shingled are now covered with corrugated iron. Many of the native houses are thatched with palm leaves. These make a durable roof, but soon become infested with scorpions, tarantulas, and other insects, which abound in this section, and these can be eradicated only by burning the covering.

A sawmill has recently been erected on this coast, about 150 miles north of this port, by a syndicate which has a concession from the Government granting the exclusive right of cutting hard pine in the public domain bordering the east coast. A considerable quantity of dimension timber and 1-inch and 2-inch material has been shipped to Panama the past year for construction work in connection with the canal. Another small portable mill, which is being utilized for sawing logs in clearing the Cukra plantation, about 15 miles from Bluefields, has been furnishing some material to that port lately.

There is no lumber importer or dealer in San Juan del Norte. A limited assortment of rough material is kept in a small yard in Bluefields, and when anything is required which is not usually carried in stock it is brought from New Orleans in steamers making weekly trips between that port and Bluefields and in such quantities as may be disposed of immediately. Freight is high and lighterage expensive, so that manufactured lumber is a luxury to be obtained only by the well-to-do classes.

CANADA.

AMERICAN INVESTMENT AND DEVELOPMENT IN BRITISH COLUMBIA.

Consul Abraham E. Smith, of Victoria, reports that an American syndicate, composed of forty-two capitalists, have purchased perhaps the largest single land transaction made in the Province of British Columbia, concerning which he adds:

There was unusual interest in Victoria in this matter. A number of railroad men and wealthy investors, residents of the middle Western States, chartered a large steamer and examined timber and coal properties on the Queen Charlotte Islands in which they held options. The syndicate, which is to be known as the Moresby Island Lumber Company, closed their options on 49 square miles of timber limits in the center of Graham Island, and also of 40 square miles on Moresby Island. They also purchased outright 8,000 acres of the choicest crown grant lands in Graham Island. The investment reaches several millions of dollars, the initial payment being $250,000. As a result of the trip a sawmill, to cost $400,000, will be at once erected by the company and located on Cumshewa Inlet on Graham Island.

Various members of the party also hold options on 10 miles of semianthracite coal lands on Graham Island, but it is reported that coal experts advised against the purchase, declaring that the coal is limited in quantity and unworkable, owing to the broken formation and lack of thickness in the veins.

The northern part of Graham Island is already in possession of another American syndicate, known as the B. F. Graham Lumber Company, and embraces both timber and coal lands.

CUT OF PINE LUMBER, RAILWAY TIES, AND PULP WOOD IN ONTARIO.

Consul E. A. Wakefield, of Orillia, sends the following report on the lumber trade of Ontario province:

The most recent estimates of the pine cut in Ontario received by the department of lands, forests, and mines give a total of 675,000,000 feet for the past year. Earlier in the season the estimates totaled 710,000,000 feet, showing a reduction in the later estimates of 35,000,000 feet, or about 5 per cent.

Information this consulate has received from various lumbermen is to the effect that not more than four-fifths of last year's cut of logs will be taken out. As many of the operators did not succeed in getting last year's logs to the sawmills the lumber cut this year should be equal to last season's. There is at present little demand for lumber, but as the stocks are in strong hands prices have not been lowered. Recently signs of improvement in the lumber market have been apparent. The original estimate of railway ties to be cut was 2,500,000. As the Canadian Northern, Grand Trunk Pacific, and Canadian Pacific railways are all obtaining ties in Ontario, the cut will probably exceed 5,000,000 ties.

The pulp wood cut is placed at 216,000 cords.

MOROCCO.

GROWING DEMAND FOR CHEAP GRADES OF LUMBER.

Consul-General Hoffman Philip, of Tangier, reports that there is at the present time a considerable and growing field in Morocco for the importation of cheap grades of American lumber. He adds:

This country supplies practically no lumber owing to the total lack of timber in the accessible districts. Building is going at an exceedingly rapid rate particularly at Tangier, and much European timber is therefore being used. Several shipments of American lumber have been sent to Tangier during the past few years and, in all but one instance, were apparently most satisfactory as regards price, quality, etc. The woods most in demand here are yellow pine and white pine. I see no reasons why American lumber exporters should not be able to compete here satisfactorily with the lumber merchants of Europe, and I feel confident that if careful attention were paid to this market by American exporters that they would soon be in a position to supply the greater part of all lumber consumed in this country. The demand for the finer class of hard woods is small as yet, but a considerable amount of hard-wood flooring is imported.

In the continued absence of any direct transportation facilities between the United States and Morocco, this matter should receive the most careful consideration of our intending exporters. With the assurance of reasonable transportation expenses the success of American lumber in this country should be assured. Former lumber shipments have been sent here in foreign sailing ships which have discharged cargo in the United States and are thus utilized for the return trip to Europe. Tangier, lying at the very entrance to the Mediterranean and but two and a half hours from the port of Gibral-

tar is in a most accessible position for ships from any port of the world.

Spanish is the principal business language in the coast towns of Morocco; English and French are also largely used and understood; Arabic, being the language of the native Moorish and Jewish traders, is also widely spoken among resident business firms. Business generally is carried on in Morocco on a credit basis of from sixty to ninety days; the banks of this country furnish excellent references and most of the business firms are able to give European references as well. My impression is that no long credit would be required in connection with importations of lumber.

CAPE COLONY.

PREFERENCE GIVEN TO THE AMERICAN PRODUCT AT CAPE TOWN.

Consul-General Julius G. Lay, of Cape Town, advises that the several dealers in that city prefer to buy the American lumber which they require through their London or New York agents, concerning which he writes:

One reason is that in London or New York their agent is able to make the best arrangements regarding freight rates, as he is on the spot where chartering of vessels must naturally take place. Another reason is that such agent, having had experience in exporting, is able to give proper instructions as to the loading of lumber and is responsible for the state in which the lumber is shipped and in which it arrives here. It would not be so difficult to get reimbursement for any loss through improper shipping from a firm who had a representative in Cape Town or even in London as it would from a lumber company at Puget Sound.

It is stated by firms here that they have tried getting their lumber direct from lumber companies in western America but almost without exception it has resulted to the disadvantage of all concerned. The methods of grading lumber in America are not the same as those used here and the difficulty in ordering from a lumber company which is not acquainted with this trade here is to make it plain just what is required according to the methods used here.

In 1906 British South Africa imported unmanufactured wood and lumber other than teak to the amount of 7,159,277 cubic feet, of which 1,808,185 cubic feet, valued at $433,158, came from the United States.

SWITZERLAND.

OPENING OF THE RHINE INCREASES SHIPPING FACILITIES.

Replying to an inquiry from an American company regarding the sale of lumber in Switzerland, Consul George Gifford, of Basel, writes:

Oak for flooring is extensively employed, but is supplied from local sources in Switzerland and in Alsace and Baden. If pitch pine can be profitably exported from the United States to this country, it is hard to see why other valuable woods should not also find a market especially under the favorable conditions of the new water route.

Formerly a very small quantity of hickory was imported by Swiss carriage builders, but of late I hear of no new shipments.

Very many efforts to import American goods into Switzerland fail by reason of the parties not being able to arrange terms by correspondence. Swiss importers almost always demand at least the three months credit to which they are accustomed in their dealings with other countries, while American exporters always want cash.

I mention as a matter of great importance that the Rhine has been reopened to navigation between Mannheim and Basel after a half century of interruption. Hitherto heavy goods from the lower Rhine, or foreign merchandise from Rotterdam at the mouth of that river, destined for South Germany or Switzerland, had to be transshipped at Mannheim or Strassburg and thence forwarded by rail, involving great trouble and expense.

UNITED KINGDOM.

DIRECT OCEAN SERVICE WOULD OPEN UP MARKET IN IRELAND.

Regarding the feasibility of shipping Puget Sound lumber into Ireland, Consul Henry S. Culver, of Queenstown, states that he can see no reason why it could not be successfully done provided one can get direct service to south of Ireland ports for small orders as well as cargo lots. He adds:

There is evidently some slight prejudice against the West Coast lumber on the part of contractors, since one or two complained of its rough stringy fiber, and claimed that it did not work as well as lumber from Quebec and Norway. This impression must, however, have prevailed some years since, for I have no knowledge of any recent cargoes from the west coast of North America.

All the timber and lumber imported into the south of Ireland comes from Canada, Norway, and Sweden, with a small amount from Russia. The timber from Canada comes in the shape of deals sawed into regular lengths ranging from 6 to 18 feet long, 9 inches wide and 3 inches thick. Some pitch pine is imported from Florida, and Alabama. The lumber from Norway and Sweden consists of spruce or pine flooring, and ceiling lumber tongued and grooved.

JAPAN.

CONSIDERABLE AMERICAN LUMBER USED IN FORMOSA.

Consul Julean H. Arnold, of Tamsui, writes as follows regarding the feasibility of shipping American lumber into Formosa:

As for the market in Formosa, I am able to state as the result of an interview with one of the largest dealers here that there is considerable American lumber in use in harbor and railroad works. At present this lumber comes via Japan. That which is in special demand is the Oregon pine girder measuring 25 to 30 feet in length by 1½ feet square. These are used in bridge and trestle work in railway construction and repair and for piles and girders in harbor improvements. Extensive harbor improvements in the port of Takao, South Formosa, are at present being inaugurated. Harbor improvements in Kelung, North Formosa, have been in progress for several years and

it will require four years more to complete them. That there is considerable lumber used in these works is attested by the fact that the dealer in question stated that his contracts for supplying such materials ranged in amounts from $5,000 to $25,000 gold from time to time. The freight rate on lumber from Japan to Kelung is $1.60 per 40 cubic feet. At present this dealer pays 55 cents gold per cubic foot for lumber of the dimensions above specified.

FRANCE.

LYON'S INCREASED NEEDS OF POPLAR WOOD—GROWING OF TREES.

Writing from Lyon concerning the market for fir doors and other wood products in that section of France, Consul John C. Covert says:

Fir doors are very cheap in Lyon and throughout France generally. They are made of sapin (fir) and walnut wood. The best quality of fir boards sell at $19 to $20 per 35.31 cubic feet. This wood mostly comes from southern France, but some shipments are received from Switzerland. The best quality of walnut sells from $50 to $54 per 35.31 cubic feet, and is in great demand. Poplar is used almost entirely for the manufacture of boxes in which wines in bottles, silks, velvets, and ribbons are packed. The manufacture of these boxes is a great resource in France. There are 100 shops making boxes in Lyon. Poplar is cheap, selling at 8 to 12 cents per 35.31 cubic feet. Every landowner grows poplars along the ditches and the roadsides. Some farmers have 100,000 poplar trees and realize quite an income from their sale.

MANUFACTURED ARTICLES.

PARAGUAY.

OPPORTUNITIES FOR AMERICAN OFFICE AND HOUSEHOLD FURNITURE.

Consul Ernest L. Norton, of Asuncion, reports as follows concerning the opportunities for the sale of American office and household furniture in Paraguay:

The volume of business to be secured will not be very great, as Paraguay is not a heavy importer, but undoubtedly there is some new business to be developed, and it will pay American furniture manufacturers to investigate the market.

The local furniture factories, of which there are six, are operated on a very limited scale, and their output is confined to ordinary wooden chairs, flat-top desks, tables, bedsteads, and wardrobes. Two factories do work of a higher order in fine parlor and bedroom suites, but as modern woodworking machinery is not used, the work being done by hand, the cost of these articles is very high.

Plain wardrobes range from $25 gold and upward; with one or two mirror doors they range from $40 gold and upward. The higher-priced wardrobes are made of cedar. This is an article of furniture that our manufacturers should make special efforts to sell, not only in Paraguay, but in all South America. Very few residences in Spanish America have closets, and consequently every family, according to its means, has from one to half a dozen wardrobes in their houses.

In household furniture the principal demand would be for extension and solid dining tables, library and parlor tables, chairs, bureaus, dressing tables, and washstands. Hall racks, sideboards, and buffets are used in a limited degree, while sofa beds, folding beds, and kitchen cabinets could not be sold at all.

Parlor furniture in use to-day is generally of Austrian bent wood, with cane seats and backs, or else of solid suites of imported furniture, heavily upholstered in leather or tapestry. The bent-wood furniture is usually bought in suites, consisting of a lounge, a rocking chair or two, and a number of straight-back chairs. The bent-wood cane-seat lounges or sofas are invariably found in all of the better-class residences, and practically in all offices.

OFFICE EQUIPMENT—SALES METHODS.

Roll-top and flat office and typewriter desks, typewriter stands, filing cabinets, office tables, bookkeepers or standing desks, and sectional bookcases, would find a market here.

Card-index cases or the filing cabinets designed for special systems of filing and handling correspondence are not in use in Paraguay, and I do not think that their introduction could be effected, except through personal explanation and demonstration.

I have been informed that American furniture may be laid down here at a cost which will give the importer a slight advantage over the product of the local factories.

Manufacturers will find it well worth while to go into detail regarding the goods offered, when soliciting trade in this country. Give all prices f. o. b. New York, all discounts, cubic weights and measurements of the goods, state the kind of stock in the furniture and whether it is thoroughly seasoned in order to prevent swelling or warping in this hot climate, the manner of packing, and the ease of setting up the articles. Full instructions, in Spanish, should accompany each consignment.

As three months, and frequently longer, elapse before replies are received to letters addressed to the United States, every effort must be made to give the prospective buyer full information in the first letter, so as to secure his order while his interest is aroused. When obliged to write for information the chances are that he will either change his mind, or place an order elsewhere before a reply is received. [The names of the four principal furniture dealers in Asuncion are placed in the files of the Bureau of Manufactures.]

ASIATIC TURKEY.

OPENING FOR HOUSE FITTINGS AT SYMRNA—HOW TO SECURE TRADE.

Consul Ernest L. Harris, of Smyrna, furnishes the following information concerning the opportunities for the introduction of lumber products into Asia Minor:

Houses in this country are generally built of stone with a framework of wood. The wooden house, so common in the United States, is entirely unknown in this section, although quite in vogue in Constantinople. This apparently would seem to preclude all opportunities for lumber products, but there is a great consumption of such fittings as door and window frames, doors and blinds, staircase parts, and

balconies, all of which are manufactured here from foreign lumber. This lumber, a kind of pine imported from Roumania, is light, knotty, and very seldom seasoned, so that it proves unsatisfactory almost invariably. Several years ago an attempt was made to import ready-made doors and blinds from Norway. The experiment, however, did not prove a success, owing chiefly to the goods not conforming in size and style to the requirements of the local demand, and also to the little effort which was exerted to push the articles into public acceptance.

There is undoubtedly an opportunity here for the sale of fittings. The very fact of the home-made product being unsatisfactory through the use of unsuitable and not seasoned lumber makes it easier for the imported articles to secure a foothold. Several conditions must, however, be considered by the American manufacturer of lumber products who desires to start a trade in Asia Minor. He must make up his mind that the trade in all lines requires the same attention and perseverance as is demanded in the United States. If he is not willing to study intelligently the needs of this market, and to exercise patience until his product is brought up to the requirements of the trade, it is best to drop the matter, as a failure through carelessness would only tend to retard the importation of articles which are bound to meet with eventual success.

The American manufacturer must also study carefully the freight question, and ascertain if the charges from his factory to this port would not be prohibitive, and if so, if it would not be possible to so devise the construction of the goods or the mode of boxing them as to reduce to a minimum the measurements of packages.

UNITED KINGDOM.

INCREASING DEMAND IN ENGLAND FOR TURNED WARE.

From information furnished to the Canadian trade commissioner at Manchester by one of the largest houses there the demand for turned wood of great variety is increasing, not only there but throughout England, and that Canada does not contribute very largely in these articles affords him some surprise. The commissioner adds:

It is difficult to enumerate all the different kinds of turned goods required in cabinet making, as there are numerous designs of all kinds of small spindles required; the other articles that bulk largely are table legs, chair legs, sofa and dresser feet, chair stretchers and spindles, also curtain poles in various lengths and diameters, broom handles, tool handles of every description, towel rollers, towel rails, and rolling pins.

Dowels are well worth consideration, and are mostly made from birch, in diameters from one-fourth inch up to 1 inch, with one-sixteenth multiples, and should be made in 36-inch lengths, but shorter and longer lengths are marketable, but only in moderate quantities, as by far the greatest demand is for 36-inch rods. Maple and oak dowels are purchased, but the trade prefers good birch. Pill boxes are largely handled here, but at present are supplied by Sweden, Norway, and Finland, also round boxes for needles and pins.

THE UNITED STATES SUPPLIES SHARE OF SCOTCH TRADE.

Concerning the use of wooden handles in Scotland, Consul Rufus Fleming, of Edinburgh, writes as follows:

The handles used here (chiefly hickory and ash) for various tools and implements are imported principally from the United States. Many sizes are in the market, from the longest hayfork handle to the shortest and smallest hammer handle. I am informed by local dealers in tools and hardware that the small handles (of birch, beech, or ash) for use in kitchen utensils, and chisels, screw-drivers, etc., are practically all produced in England, of native woods. The spools used by the great thread manufacturing concerns in Scotland are made in special departments of these establishments, to a large extent of birch imported from Maine.

CAPE COLONY.

AMERICAN DOORS AND WINDOWS PREDOMINATE AT PORT ELIZABETH.

At the South African city of Port Elizabeth Consul R. B. Mosher states that the United States practically controls the market in doors and has a large proportion of the trade in window frames. He adds:

Sweden is the only serious competitor in these lines, but American pine doors are preferred to Swedish ones of deal, for the Swedish doors in this climate not only contract and crack, but, as they are considerably heavier than those of pine, the difference in freight on inland shipments amounts in some cases to as much as 2 or 3 cents per door. As doors and windows are grouped with "Other manufactures of wood" in the official statistics, it is impossible to state the value of annual importations of those articles.

These goods are at present all shipped from New York through agents of the purchasers, and it is difficult to say from what portion of the States they come.

The present duty on doors and windows and all other manufactured wood except ceiling and flooring boards is 15 per cent ad valorem. On unmanufactured wood and on ceiling and flooring boards, planed, tongued, and grooved, 3 per cent ad valorem, with a rebate of 3 per cent ad valorem in both cases on goods from the United Kingdom or colonies. A new customs commission will meet in March to consider the revision of the present tariff. [A list of lumber dealers at Port Elizabeth who handle the foregoing articles is filed for reference at the Bureau of Manufactures.]

FRANCE.

UTILIZATION OF WOOD FOR DOMESTIC PURPOSES AT PARIS.

Consul-General Frank H. Mason, of Paris, advises that kindling and fuel wood are scarce and dear in Paris and generally throughout France, concerning which he writes:

The retail price of beech or hornbeam wood in Paris is from $10 to $11.19 per 2,220 pounds. Kindling wood, made generally of splinters or twigs bound into small bundles, sufficient to light a fire, are sold for $1.93 per 100, or 2 cents per bundle, which is relatively cheap, as labor in the country districts is poorly paid and the bundles

of twigs contain the savings from the pruning of vineyards and the cutting of trees in the woods.

Kindling and firewood are sold in French cities by coal dealers. Firewood is free of duty when imported into France, but on entering Paris it is subject to the octroi or municipal duty of 50 cents per cubic meter.

WATTLE CULTURE IN NATAL.

A TROPICAL TANNING MATERIAL AND ITS EXTENDING USE.

In stating that it is not well known, even among the tanning trade in America, that the black wattle (Acacia molissima) industry in Natal is considerable, Consul Edwin S. Cunningham, of Durban, supplies the following detailed information:

The inquiry has often been made to this consulate by persons interested in its culture in this colony if no demand existed in the United States for wattle bark. That American tanners and dyers may have a knowledge of this new material some data is herewith presented concerning the present output and the possibilities of this district to provide an additional supply of this bark.

The black wattle tree was transplanted from Australia, and when first introduced into Natal there was no idea of its becoming a valuable commercial asset; but its beauty, combined with its quick growth, made it a particularly desirable tree for ornamental purposes, and with only this object in view its growth was first begun in Natal a little over a quarter of a century ago. It was in 1888 that the present Sir George M. Sutton issued a pamphlet entitled, "Wattle Bark: A Paying Industry," which gave his personal experience and pointed out for the first time that it could be converted into a valuable commercial product; and that date can be considered the commencement of the cultivation in Natal of wattle plantations. From about that period the wattle was intelligently and systematically planted and grown, until last year the acreage in wattle plantations in Natal was 80,762 acres, which will probably be considerably increased during 1907. Wattle bark has now attained to third place in the list of over-sea exports from this colony (although maize will probably supplant it in that position this year), and there is every indication of a continuous increase in the output.

GROWTH OF THE INDUSTRY.

The wattle industry gives a quick return, beginning about five years after the tree is planted. The tree needs no replanting, it being a perennial which the cutting of the first planting does not interfere with.

In 1886, 39 sample packages were sent to London, and were followed the next year by 447 packages. The encouraging and satisfactory reports received from these shipments—which continued to be made in packages until 1896—gave great confidence in the future of the business, and the plantations increased their production considerably. From the modest beginning in 1886 the output and shipments increased gradually until 1895, when 57,666 packages were shipped. The industry passed through its experimental stage during

this period of ten years, in which was shipped a total of 168,193 packages, valued at $295,985. There were shipped in 1896, 3,378 tons; in 1898, 9,427 tons, and in 1902, 15,537 tons. In 1904 the shipments were valued at $452,151; in 1905 at $499,624, and in 1906 at $410,942. For the twelve months ended October 1, 1907, 297,410 bags of bark were exported, as against 209,998 in the corresponding period of 1905–6.

Trees are felled and stripped of their bark gradually after they are five years old. Complete felling will probably take place when the trees are ten years old. The average yield is estimated at one-half ton per acre each year.

In addition to the bark the wood is valuable, when there is a demand for this kind of timber. The cutting must take place when the sap is up, which is between January and August. The bark is then stripped from the entire tree, extending to all limbs of 2 inches in diameter. The bark in this form is dried; many plantations have large sheds in which to dry it, though sometimes, when the weather is fine, it is dried in the open. When it has become dry—which should occur after 20 or 25 days—it is prepared for market by being ground, cut, or shredded into small bits. It is then packed in bags of a muid (200 pounds) each, and is ready for export. The price varies somewhat, but the prevailing market price for first quality per ton is £7 ($34.07) f. o. b. Natal.

QUALITY OF SUPPLY—FREIGHT RATES.

To prospective buyers a word of warning is pertinent, because some farmers do not take the proper care in curing their bark, and when it reaches the European market it is dark, mildewed, and otherwise damaged; and it has been said that some unscrupulous persons have at times mixed other barks with the wattle.

The destination of the bark exported from Natal for the year 1906, in pounds, was: United Kingdom, 23,900,413; Germany, 6,218,073; Russia, 2,048,546; Austria, 580,396; Belgium, 300,119; and Mauritius, 6,992.

The quality of the wattle grown in Natal is equal to that produced anywhere, and analyses have shown it to contain as high as 40 per cent of tannin. At the present time there seems to be no serious competitor to Natal wattle bark, its cultivated and increasing supplies going far to meet the naturally grown and diminishing supplies from the original home of the tree. In the districts of Griqualand and Pondoland, in Cape Colony, cultivation of the wattle has been systematically undertaken, but the adaptability of those sections to its growth has not yet been proved. In German East Africa experimental tests have also been made, and bark from there, upon being analyzed at Hamburg, has shown 27 to 41 per cent of tannin.

The freight rate on wattle bark to New York per long ton is quoted at 37s. 6d. ($9.12), plus 10 per cent primage. Upon this a 10 per cent rebate will be paid, upon the conditions of the shipowners' contract being complied with. A ton measures 84 cubic feet when the bark is packed ready for shipment. Some samples of wattle bark are forwarded which have been prepared by a wattle-producing company at the request of an exporting firm. [These samples will be furnished to applicants by the Bureau of Manufactures.]

GROWING THE WATTLE TREE.

PLANTATION CULTURAL METHODS AND INCREASING PRODUCTION.

Supplementary to Consul Cunningham's recent review of the wattle-bark trade in Natal, Vice-Consul Russell Hastings Millward, formerly at Durban and now transferred to Tampico, Mexico, furnishes the following deseription of growing this tanning material:

More than 120,000 acres have been placed under cultivation, as compared with 15,000 acres in 1897. As a tanning material wattle is most satisfactory, and contains, in a consistent form, from 35 to 40 per cent of tannin. It is used by English, French, German, and Belgian manufacturers chiefly, and in the tanning of sole leather returns a product of unusually good quality, sound and uniform, and of a pale rose shade in coloring.

There is an erroneous impression that wattle will grow in almost any kind of soil, but the fact is that discretion should be used in the selection of the ground for the purpose. A well-drained soil, and an annual rainfall of 20 to 40 inches are most essential, and the sowing of the seed and laying out of the trees require more than ordinary care. In the months of April and September the plowing is generally done, and a single-furrow plow, drawn by oxen, is used in the initial turning over of the soil.

PLANTING AND THINNING.

The seed is then scalded in boiling water and planted at once, in order to prevent its molding or premature sprouting. It was discovered, possibly in Australia, that seed treated in this way would grow more readily, and nearly all planters have adopted the method. The rows are set from 9 to 10 feet apart, and the seed at the same distance. After six weeks sprouting takes place the young trees are allowed to grow for one year, at the end of which time they are thinned out and a second lot of seed planted.

In this manner, 5 or 6 generations of trees are set in, each just one year apart; and about the time the youngest trees are ready for thinning out the first generation is sufficiently developed for felling and stripping, and the space thus created is readily filled by the other trees coming on. After the fifth or sixth planting, as the case might be, additional preparing of the soil or sowing is unnecessary, as there is always sufficient seed sown by the trees to maintain a regrowth of such abundance that it only becomes necessary to thin out the crops annually.

LOCATION OF PLANTATIONS.

Experience teaches that trees should be kept at a uniform distance apart, but there are no fixed rules, and trees can be found frequently growing in the most promiscuous manner on some of the plantations. In order to prevent destruction of the trees by the veldt fires, so common to South Africa, clearings of considerable width are cut at the edges and sometimes around the entire forest.

Wattle has not been grown with any degree of success either near the coast or in the thorn veldt, but thrives throughout a strip of land lying between 15 and 70 miles from the coast, and in the districts adjoining the foothills of the Drakensburg Mountains; the Umvoti and Pietermaritzburg counties are particularly well adapted to its

cultivation, and the tree is also grown in some parts of Zululand with satisfactory results.

The felling and stripping is done either in May or December, as the bark then contains its highest percentage of tannin; and also because it can be dried to much better advantage during seasons in the year when there is little danger of exposure to rains or dews. Notwithstanding that most felling is done when the tree is but five or six years of age, many planters prefer to allow the tree to attain a growth of from seven to ten years; but the increased returns are not proportionate, and the delay in felling is rather a hindrance to the younger trees, which require so much more space each year as they grow, and are naturally retarded if crowded too closely.

PREPARATION FOR MARKET.

Drying sheds are used on many of the plantations, and when outside drying is too rapid to permit of the bark being easily stripped, the trees are carried inside. Thorough drying requires two weeks' time under proper climatic conditions. The bark is then chopped or ground and made ready for shipment to the local buyers, who in turn sort out the various grades and repack for exportation to the outside markets. As a rule, the bark is chopped or cut into half-inch pieces and packed in sacks of 3 bushels and weighing about 185 pounds each. Most of the product has been exported in this form, but there is now an effort being made to erect plants in the colony for the purpose of grinding the bark and manufacturing an extract suitable for the trade.

After stripping off the bark the remaining timber is sold for use in timbering mines and for various kinds of construction work; it is also extensively employed as scaffolding in the erection of buildings. The waste cuttings and faggots are sold as firewood, for which there is at all times a ready and profitable market in the colonies.

Conservative estimates place the average annual crop of wattle at from 4 to 5 tons of bark, and from 20 to 30 tons of good timber to the acre. The cost of preparing the ground and planting varies from $7.50 to $10 per acre; while the total cost of production averages about $35 per acre, including the land, fencing, taxes, and labor.

Labor is performed chiefly by coolies (Indians), who are undoubtedly the most reliable and satisfactory workers in South Africa. Wages are paid at the rate of 24 to 50 cents per day, and ordinarily a cooly will fell his trees and strip and lay out for drying a half ton of bark per day of ten hours.

PROFITABLE RETURNS—MODERN AGRICULTURAL IMPLEMENTS.

During the seven months ending July 31, 1907, there were exported from Natal 19,017 tons of wattle bark, valued at $490,485, showing an average price of $25.70 per ton for that period.

Thus it can be seen that few industries present such inducements as the wattle. Land undesirable for any other purpose may be put into wattle; little or no skill is required to grow it, and but a small amount of capital is required with which to operate. On the other hand, results are measured and certain, returns are quickly made, and large profits assured. When the tree is once started, with the exception of fire, there is practically nothing that can devastate it, and, after the first crop is taken off, no further preparation of the ground

or sowing is required, and there need be little fear of overproduction of this popular tanning material as the demand is increasing faster than the supply, and the market is extending, not only throughout Europe but in South America, the United States, and Canada.

Manufacturers of agricultural implements should keep in touch with the agents and dealers in Natal [lists of which are on file at the Bureau of Manufactures], as the farmers and planters are rapidly discarding the primitive methods so long in vogue there, and are now adopting modern appliances in all forms of agricultural work.

BRITISH FORESTRY PROMOTION.

INVESTIGATION BY COMMISSIONS—DECLINING TIMBER SUPPLY.

A report from Consul Frank W. Mahin, at Nottingham, states that for over twenty years past the conservation of British forests has been discussed and urged by persons interested and informed on the subject. The consul reviews the movement and its relation to the supply of timber as follows:

Twenty years ago a committee was appointed by the House of Commons to consider how "our woodlands could be made more remunerative." It reported in favor of forest schools and a national Board of Forestry, and remarked on the management of crown forests and private woodlands in the United Kingdom. Another step was taken several years later, when the Board of Agriculture was authorized by Parliament to collect forestry statistics and to financially aid forestry lectures and instruction, and a small sum was accordingly granted to four educational institutions for those purposes.

A third step was taken ten years later, when a committee was appointed by the Board of Agriculture to inquire into and suggest measures to promote British forestry. This committee made a report which aroused general attention. It pointed out that there was rapidly approaching a general shortage of the timber, and that a great waste area existed in these islands which might be afforested. But this, the report said, was too vast a work for individual effort to cope with; and while not urging the Government to undertake the task it indicated that no other course was practicable.

Five years later, in 1907, another step was taken by the Government purchase of an estate in Scotland and another in Ireland for practical work in afforestation. Special instruction in forestry has been established at Oxford, Cambridge, and other schools. Several great municipalities are planting forests on the areas whence their water supplies come. It now seems that the period of tentative inquiry has ended and that of actual demonstration has begun.

LACK OF INTEREST—INCREASING IMPORTS.

The lack of general interest in the preservation of Britain's forests is attributed mainly to the universal substitution of coal for wood as fuel, and to high prices of British agricultural products, leaving but a limited percentage of the population with special reasons for giving the subject any thought.

Meantime, during the past twenty years, while those steps were being taken, the imports of foreign wood and lumber into this country were enormously increased. That of fir, oak, and teak, sawed and

as logs, gained from 50 to 86 per cent in quantity. Of furniture woods, mahogany increased 96 and "unenumerated" 288½ per cent, while the imports of wood pulp grew by 391 per cent. The only offsets were small decreases in staves and some "unenumerated" timbers.

At the same time the area of sources of supply was steadily decreasing. A large part of the imports was formerly drawn from Germany, which now can not only export no timber, but is itself an importer. The United States is also practically closed as a source of supply. Mahogany is imported from Mexico, Cuba, and the West Indies, and oak from Russia and Japan; but as to all other varieties local dealers say that Canada and the Baltic regions are practically the only present available sources of supply for Great Britain.

Statistics show that the United Kingdom has a smaller percentage of woods to other land and a smaller area of woodland per capita of the population than any other country in Europe. It has absolutely less woodland in acres than any other European country except Belgium, Holland, Denmark, and Portugal. The statistics count Turkey, Bulgaria, Bosnia, and Herzegovina as one, with five times Britain's woodland acreage, but give all other countries separately.

RUBBER INDUSTRY.

PERU.

WORKING THE FORESTS OF THE UPPER AMAZON.

As a result of personal visits to various districts and camps within the sphere of his consulate, which embraces trans-Andean Peru, Consul Charles C. Eberhardt, of Iquitos, furnishes the following report covering the manner of securing the right to work rubber tracts, the manner in which the same are worked, and how the product is collected and prepared:

Trans-Andean Peru would still be practically unheard of in the outside world were in not for the rubber industry. As nearly as I can gather, from conversing with leading lawyers and rubber men here, the laws of Peru covering the acquirement and working of rubber tracts are still incomplete and undergoing constant amendment. At present the following steps are held to be necessary:

Selection of a tract of land is made and the location, description, etc., of the property advertised in the official organ for thirty days, that any claims against said property may be registered. At the expiration of this time, no countercharges having been made, the prefect of the department is petitioned, and he appoints a surveyor to lay out the land, furnish a plan of the entire tract, etc. This plan, together with the original description of the land, petition to the prefect, and all papers bearing upon the subject are forwarded to Lima for final action.

LOCATING AND WORKING THE RUBBER TRACTS.

If the procedures in the earlier stages have been regular in every particular, the request is rarely refused, though the difficulty of communication between Lima and the Department of Loreto at present requires that from six months to a year usually pass before final title is received, and this is only in the form of a lease for ten years,

with the privilege of renewing at the expiration of that time, as the lands are not sold outright. No fixed cost can be given for such procedure, because it differs according to the difficulty of access to the tract for the surveyor, the bargain made by the petitioner with different parties employed, etc.

The title for ten years having been secured, the petitioner may use the land as if it were his own, and his first movement is usually to place men at work locating rubber trees. One man will open up what is called an "estrada," consisting usually of as many rubber trees as can be visited and worked by a rubber gatherer in one day, the number of trees differing as the district may be thickly or thinly studded with such trees, the rapidity with which the rubber gatherer may work, etc. For instance, near Iquitos, many estradas contain but 75 or 80 trees, in the Javary River district the average is 150, while in the Acre district it is said that some estradas contain as many as 400 trees.

For locating an "estrada" and clearing a path from tree to tree the workmen receive $25 to $37 United States currency. When this preparation has been completed, all is in readiness for the work of rubber gathering, which goes on during the dry season, from July to January, the trees being tapped in a fresh spot every other day during that time. Work can not be carried on during the entire year for several reasons: (1) By such constant tapping the tree would be worked to death in a short time; (2) during the rainy season a great portion of the land is absolutely impassable, because of inundation; (3) the rain water flowing into the cups and becoming mixed with the liquid renders it unfit for market.

The rubber worker in the more thickly settled districts is usually a poor laborer, who buys his supply of provisions, consisting chiefly of rice and beans, from his "padrone," the owner or renter of the "estradas," whom he must pay in rubber, at prices prevailing at the time of delivery. Charges for provisions are usually extremely high, and at the end of the season the laborer, though he may have delivered a large amount of rubber, is rarely out of debt to his "padrone."

GATHERING THE RUBBER.

In a tract which I recently visited there were 24 estradas, worked every alternate day during the season by 12 rubber gatherers. I accompanied one of the men in his work, and performed part of all the duties of the rubber gatherers, from the cutting or tapping of the tree, placing the cups under the wounds, gathering the liquid, to finally smoking it over a half-smothered fire. Start was made at 5 o'clock in the morning and the work of tapping the trees and placing the cups (each with a capacity of probably one-half pint), performed. The smallest trees (about 6 inches in diameter, none of smaller size being worked) carry 2 of these cups, the largest we visited (about 2 feet in diameter) carried 9, though the average was 4 or 5 cups, on trees of from 15 to 18 inches in diameter. Much of this time we waded through the standing water of the swamps almost to our waists, and it was 10 o'clock before we had visited all of the 150 trees.

As soon as the entire round was made the milk-gathering was in order. Carrying a can of about 2½ gallons capacity, we visited the same trees and emptied the cups, many of which contained less than

a tablespoonful of liquid, and the entire day's work produced about 2 gallons. Returning to the hut in the afternoon this liquid was smoked over a half-smothered fire, being poured over a round stick of about 2 inches in diameter, which is revolved in this cloud of smoke till the liquid is formed into a hard, white substance (which later turns black) of approximately two kilos (4½ pounds) of the best grade of rubber, or "jebe fino," worth at the present market prices about $10 United States currency.

A new series of wounds is commenced every month at a point as high as the workman can conveniently reach, each subsequent wound being made a little below and in the same vein, till the bottom of the tree is reached at the end of the month. When a tree has been overworked and the milk does not flow freely, a scaffolding is constructed about the tree, which the worker mounts and inflicts the wounds farther up along the trunk. This practice, however, is very injurious to the tree, if not absolutely fatal in the end, and is forbidden on the tracts which I have visited.

DESTRUCTION OF THE RUBBER TREES.

The foregoing are the methods ordinarily employed in Peru in working the "jebe fino," the best grade of rubber, and "jebe debil," the second grade. In the working of the "caucho," the cheapest grade of rubber, the tree itself is cut down and nature's work of years undone in a few moments. Thus it is that entire regions, vast in area, where the caucho was once to be found in abundance, are now entirely denuded of such trees, except for the young ones growing up, which will in time, of course, be far enough advanced in growth to be in turn productive, but it seems that natural recuperation can never keep pace with the present rate of destruction.

In spite of the assertions of many of the "Shiringeros" (rubber gatherers) that there is no cause for alarm at the increasing number of trees dying in proportion to the number of new ones springing up, and the further admitted fact that many of the trees which have worked for twenty and thirty years are still productive, there is no denying the fact that here in Peru at least the number of rubber-producing trees is steadily growing less. Systematic planting and cultivation would be of inestimable benefit to the country and the individual.

FEDERATED MALAY STATES.

COMPARISON OF THE EXPORTS DURING THE PAST TWO YEARS.

Consul-General Thornwell Haynes, of Singapore, supplies the following statistics of the quantity of cultivated rubber exported from the Federated Malay States during the past two years:

State.	1906.	1907.	Increase.
	Pounds.	*Pounds.*	*Pounds.*
Selangor	681,040	1,198,751	517,711
Perak	149,640	255,530	105,890
Negri Sembilan	198,112	530,004	331,892
Pahang	Nil.	Nil.	Nil.
Total	1,028,792	1,984,285	955,493

During December, Perak exported 30,784 pounds, Selangor 125,242 pounds, and Negri Sembilan 68,062 pounds.

TURKISH GUM TRAGACANTH.

SUPERIOR QUALITY OF SMYRNA ARTICLE—TRADE DIFFICULTIES.

A report from Consul Ernest L. Harris states that gum tragacanth is exported in considerable quantities from Smyrna, and that the sort particularly known as "Smyrna tragacanth" is said to be the best produced in Asia Minor. He gives the following particulars of this trade:

It is not grown, however, in the immediate vicinity of Smyrna, but comes from Karahissar, Jalowadsch, and even farther in the interior, where it all grows wild. This kind of gum consists of white, yellow, and red hardened substances, which have become congealed after oozing out of the bush, or tree, in the hot sun of a Levantine summer. The gum is secured in a similar manner as opium, by an incision in the branch. This is done in the spring and summer of each year, and the gum is usually scraped in September, when the first rains begin to fall.

During the last twenty years, the gum-tragacanth trade of Smyrna has decreased. It has been estimated that the trade has fallen from 600,000 pounds to 55,000 pounds in that length of time. One of the main reasons advanced is that the trade needs a large amount of capital, relatively speaking, to keep it going. Nowadays this product is shipped from the interior of the country to Smyrna in an unsorted condition. It is then sorted in this city into some seven different qualities in order to meet the demands of foreign markets, especially those in England, Germany, and France, where only certain grades are purchased.

Should the Smyrna merchant be unable to place all he has on hand in one season, he usually finds considerable difficulty in disposing of it at all. On the whole, the trade seems to be passing more and more to Constantinople. The exports of Smyrna tragacanth to the United States during 1907 amounted to only $15,656.

MATCHES IN NICARAGUA.

GERMANY AND SWEDEN SUPPLY THE TRADE OF THE COUNTRY.

In transmitting the following information Consul Frederick M. Ryder, of San Juan del Norte, calls the attention of the American manufacturers to the fact that nearly all the matches consumed in Nicaragua are of German and Swedish manufacture.

There is not a match of American manufacture in this district; merchants have tried in vain to place these upon the market, but consumers have condemned the product as not suitable in this climate, which has a record of 265 inches of rainfall in twelve months.

Not only must matches be especially adapted to the extremes of dampness and humidity of this climate, but they must be packed with the greatest care in order to protect them from any possible contact with such dampness. They should be wrapped in packages of 12 small boxes, and these done up in packages of a dozen each, wrapped in prepared waterproof paper, thus making a gross of the small boxes; 6 of these waterproof packages are then placed in a light tin case, which is soldered, thus making it air-tight; 6 of these

tin cases are inclosed in a case made of good quality spruce, not more than seven-eighths of an inch in thickness, as this lumber is less liable to split and is more serviceable in every way for the purpose.

The sale of matches in the Republic being exclusively in the hands of the Government, there is only one customer for the manufacturer to deal with, and there would appear to be no reason why the American manufacturers should not have a fair share of the trade.

FORESTRY IN INDIA.

INCREASING GOVERNMENT REVENUE—SANDALWOOD CULTIVATION.

Consul-General William H. Michael, of Calcutta, reports that the British India government realized from the forests let for revenue during the past financial year the net sum of $162,632, other particulars following:

The gross revenue was $364,403. The income was 10 per cent higher than for the previous year, though it is stated that the revenue from this source is small compared with what it should be. It is stated that the young timber coming on will enable the government to greatly increase the sales of timber.

The Coorg forests are reported to have yielded 247 tons of sandalwood, worth $409,314, during the year 1906–7, the prices obtained being slightly lower than in the previous year. Measures for the artificial reproduction of sandalwood are being actively carried out in that province. In Hudgur and Banawara about 29,000 sandal seedlings were transplanted and uprooting of trees affected with the spike disease was continued.

INDUSTRIAL WORLD.

CONDITIONS AND DEVELOPMENT.

GERMANY.

LAST YEAR AN UNUSUALLY PROSPEROUS ONE—PRESENT TRADE OUTLOOK.

Consul H. J. Dunlap, of Cologne, forwards the following review of industrial conditions in Germany:

The annual reports made to the Chamber of Commerce in the various cities of the German Empire show that 1907, with few exceptions, was an unusually prosperous year. During the last two months of the year, however, since the beginning of the financial panic in the the United States, many branches of manufacturing lessened their output, owing to the decreased demand for their finished products from the United States. This may be said to be more general among those factories engaged in making articles of luxury, such as jewelry, torchon laces, and the finer qualities of fancy goods.

Reports from such industries as coal mining, iron and steel production, woolen goods, cotton goods, electric appliances, breweries, oil mills, fertilizer factories, and the like all show increased production. The annual dividends run from 4 up to 25 per cent, and more in some branches. In few instances have the directors of works and factories omitted a dividend, and where such action has been taken it has been because of extraordinary outlays for improvements or some unusual reason. In all instances the amount set aside for reserve and contingencies has been greater than in any previous year.

Just at present both labor and manufacturing appear to be waiting on the outcome of the financial conditions in the United States. So many industries are dependent upon the market of that country to dispose of their goods that they naturally feel a hesitancy about further outlay for material or production in advance of orders.

AGRICULTURAL PRODUCTS—INTEREST AND EXCHANGE RATES.

The season was not an especially good one for agricultural products, but in spite of many drawbacks the yield of all small grains was an average one, and the same may be said of tree fruits, apples and pears being in abundance in the local markets and at prices that compare favorably with those of preceding years.

There is a scarcity of American-grown apples, owing to the high prices in the United States. Generally at this season American apples sell here at $5 to $6 a barrel, seldom more than $7, this latter being a very fancy price, above which they can not be forced. There is no price quoted for American-grown apples in Cologne at this time, because they are practically not to be had at any price.

A report for 1907 by the Rhein Joint Stock Company for the Production of Beet Sugar states that the beet crop was much smaller

than usual and the production of sugar less. The directors of the company favored a proposition before Parliament for reducing the national tax on sugar for home consumption from 14 to 10 marks per 100 kilos ($3.33 to $2.38 per 220 pounds), but expressed small hope of the proposition becoming a law. An annual dividend of 4 per cent was declared.

Of late years, owing to the industrial expansion in this district, the rate of interest has risen from 4 to 6 per cent annually. At the present time the bank rate is 7 per cent, but I am told by bankers that loans to ordinary borrowers are seldom made for less than 10 per cent. A reason for this is always given by saying the demand for money from the United States has caused the Reichs Bank to raise its rate of interest and made money scarce. It would seem that the much-quoted German system of supplying an elastic currency in time of high interest does not have the effect, at least in this country, that its advocates imagine it would have in the United States.

Exchange between Germany and the United States has not been much disturbed, ranging from 4.20 to 4.25 marks to the dollar, while between Germany and England it has risen from 20.20 to 20.55 marks to the pound sterling ($4.8665).

THE IRON AND STEEL INDUSTRY.

At a recent meeting of the National Association of German Manufacturers of Iron and Steel it was stated that the industry had been unusually prosperous during the past year and that the output had been materially increased, caused principally by the home demand, which was created by the favorable trade conditions of the country. The business of Germany had increased immensely. In over 1,500 savings banks of the German savings bank union there are deposits of over 9,000,000,000 marks ($2,142,887,138).

Another indication of this prosperity of the industry is the increase in the income and supplementary tax. All incomes under 900 marks ($215) are tax free. In 1892 there were 2,437,886 individual taxpayers connected with the industry and in 1906 there were 4,675,199, an increase of 91.8 per cent. The taxable property increased from 5,961,927,632 marks ($1,419,506,579) to 10,725,936,684 marks ($2,553,794,448) during the same period, an increase of 79.9 per cent, and the actual tax paid in 1892 from 124,800,000 marks ($29,714,290) to 206,800,000 marks ($49,238,095) in 1906, an increase of 73.7 per cent.

During the past few months the scarcity of money and the high rate of interest have caused a lessening of new undertakings and had a weakening influence on the industry. The financial panic in the United States has had an unfavorable effect on all industrial undertakings in other lands as well and caused a hesitancy in placing orders. There is, however, no question about the iron and steel industry being as yet fully employed. The increase in pig iron during the ten months of the year has been considerable, and during October, 1907, the consumption of 1,183,676 tons equaled that in October, 1906. Should the present unfavorable conditions continue, it is within reason to expect that the iron and steel industry will shrink to some extent.

Much loss to both the iron and steel and the coal-mining industry, which is closely related, has been caused by the scarcity of cars, which

has increased largely during the past year, and a large wage had been lost through enforced idleness.

RAILWAY PASSENGER RECEIPTS.

The Kingdom of Wurttemberg on October 1, 1906, added a fourth-class car to its train service on Government-owned railways, in which the accommodations consist merely of wooden seats arranged around the sides and, in some cases, a double row of seats through the center of the car on which the passengers sit back to back. The rate of fare charged in such cars is 2 pfennigs per kilometer (100 pfennigs= 23.8 cents; kilometer=0.62 mile).

The fourth-class cars are not run on the fast trains, and their operation has not been favorable from the Government's standpoint, the third-class cars on trains in which those of the fourth class were run being nearly deserted. A comparison of receipts and passengers was made from April 1 to September 30, 1906, and from October 1, 1906, to March 31, 1907. In the first period of the total number of passengers 0.1 per cent were first class, 5.23 second class, and 94.67 third class. In the second period 0.9 per cent of the total were first class, 4.15 second, 32.44 third, and 63.32 fourth. No less than 30.88 per cent of the third-class passengers changed to fourth. The fourth-class cars in trains carrying all classes outnumber all the others, and are patronized by many well-to-do people, not only for short trips, but for longer ones. The total passenger receipts for the first half year were, in round numbers, 10,377,000 marks, and for the second 7,772,900 marks (1 mark=23.8 cents). The season may have had something to do with this, as more people travel in summer than in winter, but the experiment shows that people do not care so much for speed and style as for cheapness.

A large share of the products of market gardens and orchards are transported to market on these fourth-class cars. The peasants take with them into the car large baskets containing their products and on arrival at their destination carry them on their heads to the market place. This saves the expense of a horse and also saves time over the transportation effected by means of a cart pulled by a dog.

INCREASE IN POPULATION.

Although a census is taken in Germany every five years, the last one being in 1905, an industrial census was taken in 1907, in which the inhabitants were also enumerated. While it will probably be some time next year before the report in its entirety is published, the number of inhabitants in the Empire has practically been determined.

The entire population amounts to 61,697,277 (in 1905, 60,641,278), an increase of 1,055,999, being an increase in one and one-half years of 1.74 to the 100, or 1.15 to the 100 population per year. Between 1900 and 1905 the yearly increase was 1.46 per 100, showing a small falling off. This may in a measure be accounted for by the fact that the regular census was taken in the winter, when many of those who perhaps seek employment in foreign countries are at home, while the industrial census was taken in the summer when many people are away from home. It was also shown that there is a marked migration from the eastern toward the western provinces of the Empire, much more observable than shown in any former census.

The census shows there were 30,453,270 males and 31,244,007 females, an increase of males from December 1, 1905, to June, 1907,

of 568,589 and of females of 487,410. The large increase of males over females may be partially accounted for by the fact that during the summer many workmen from Russian Poland, Austrian Galicia, and Italy find employment in Germany on the farms and on public works.

The industrial census showed 13,459,520 households, an increase of 184,989 over 1905. There were 2,928,074 industrial establishments, a decrease since 1905 of 132,787.

CHINA.

EXPORTS OF PIG IRON TO UNITED STATES—INDUSTRIAL DEVELOPMENT.

In calling attention to the tendency in the Chinese Empire toward the production of commodities heretofore imported and to getting a foothold therefor in foreign markets, Consul-General Charles Denby, of Shanghai, deals at some length with the present and prospective exports of Chinese pig iron to the United States:

An occasional shipment of pig iron from China to the United States marks the beginning of a commercial movement which is worthy of attention. An American company operating a number of trans-Pacific steamships under the British flag has the agency of the Chinese furnaces for the supply of the Pacific coast. Occasional small quantities of pig iron are delivered at San Francisco by these vessels, as well as by the Pacific mail steamships.

The only shipment to the Atlantic coast of which I have been able to obtain definite knowledge is a cargo of 1,500 tons shipped on July 5, 1907, from Hankow direct to Brooklyn. The price laid down in Brooklyn is said to have been $17.50 gold per ton, including freight, $4.75 per ton from Hankow to destination.

This event is indicative of such far-reaching potentialities that it merits the attention of the iron industries of the United States. The carrying of such a commodity as pig iron 600 miles down the Yangtze River, from Hanyang to the sea, and then 14,000 miles farther, via Suez, and laying it down at New York in competition with American prices, is in fact a striking instance of modern trade development. This, of course, is only possible through the fact that ocean-going ships can reach Hanyang with 18 feet draft at almost all seasons of the year, permitting the carriage of cargoes of about 2,000 tons without transshipment, and to the fact that iron is found in great quantities in China, and produced under favorable conditions as to coal and labor.

IRON AND COAL FIELDS—AMERICAN DEMAND.

The most promising ore fields in China are situated in the vicinity of Hankow, lying in the provinces of Hunan, Hupeh, and Kiangsi. Those of Shansi and Hunan, covered by concessions to the Peking syndicate, while regarded as of almost indefinite richness, have not yet been commercially exploited on a large scale.

It is worthy of note that the Hunan and Kiangsi fields were explored by the American survey party which in 1898–99 made the preliminary examination for the line of railway from Hankow to Canton, which an American syndicate had contracted to construct.

The coke from the coal mines of Pinghsiang, in Kiangsi, near the border of Hunan, and the ore from the adjacent iron mines are used

for the manufacture of steel at the Chinese furnaces at Hanyang, across the river from Hankow, at which are rolled the steel rails which supply the railways of China. These furnaces are under strong Chinese official management and their capacity has lately been largely increased with a view to obtaining a foothold in the markets of the United States. A table of the analyses of various Chinese coals by an engineer is forwarded herewith. [On file in the Bureau of Manufactures.]

The shipments of pig and manufactured iron from the Government iron and steel works at Hanyang for the year 1906 amounted to 41,050 tons, valued at $821,000 gold, an increase of tenfold in ten years.

American demand for ore and for pig iron has driven the furnace men to an investigation of the producing capacity of all the mineral fields of the world. Mexico, Cuba, Spain, South America, and Australia are being levied upon by the American purchaser, and if the iron of China proves as good as it is claimed to be the product may be a material factor in the supply of the American markets.

HANDMADE ARTICLES SUITABLE FOR EXTENSIVE FACTORY WORK.

The tendency in China toward the development of her manufacturing industries makes it opportune to consider the advisability for manufacturers of foreign nationality to enter into this promising field. It is evident that by reason of China's large population an immense demand would arise for an article of daily use if by modern machinery it could be manufactured at a cost even a little below the price at present paid by the consumer. In several lines it is believed that ample capital with the resulting facility for purchases on a large scale of raw material in the most favorable market, coupled with economical American methods of manufacture, skillful marketing, and intelligent advertising, will have a great advantage over the less advanced methods of the Chinese, notwithstanding the cheapness of their labor.

In several lines this has been abundantly proved. The manufacture of cigarettes by foreigners is an enormous and growing industry, rendered possible only by perfection of labor-saving machinery, careful supervision, and intelligent financing. Flour mills, paper mills, cotton mills, and rice mills also show by their successful operation the advantages of intelligence and business acumen in this field, where the insignificant market value of any unit of production seems to render it unworthy of attention.

CHINESE INDUSTRIAL PROSPECTS.

It is certain that the manufacturing development of China is destined to encroach upon hitherto untried fields. Two lines, namely shoes and ready-made clothing, seem to offer particularly favorable inducements for manufacturers of low-grade goods upon a large scale.

In both of these lines ample capital, faithful copying of Chinese fashions, foresight in purchasing raw material, skill in advertising and marketing, and a patient waiting for development would be necessary, while to the concern that could create and hold the market the returns would be immense.

With a view to ascertaining whether this idea will find a response among Americans with the disposition and means to consider the

matter, I forward herewith three pairs of the commonest Chinese shoes [on exhibit at Bureau of Manufactures], for which there is an enormous demand. These shoes retail in the Chinese market for ninety-five cents Mexican ($1 Mexican=50 cents American currency) a pair, and sell in lots of 100 at 85 cents Mexican a pair. The same style in satin retails at $1.15 per pair and sells in lots of 100 at $1.05 per pair. These shoes are made in small shops by hand and are ordinarily sold in lots of 25 and 50, being made only in small quantities in a great number of shops.

Should this subject be found to warrant further investigation reports will be made and samples submitted of other articles of Chinese daily use.

CANADA.

OVERSUPPLY OF LABOR, LUMBER, AND COAL IN BRITISH COLUMBIA.

Consul Abraham E. Smith sends from Victoria the following review of the industrial situation in British Columbia:

The same lack of employment for labor which exists generally throughout the country is also evident on Vancouver Island. A year ago it was impossible to get men to perform the labor required; enterprises were abandoned, and work suspended. As a consequence, wages reached unprecedented figures. The lumber mills on the island also suffered from lack of labor. Thus the large mills at Chemainus and at Mosquito Harbor found difficulty in fulfilling contracts.

With the financial stringency which set in at New York in October a decided change took place. The decline in price and almost entire cessation of demand for lumber has caused the two largest lumber mills on the island, principally owned by Americans, to close down entirely, thus causing many idle men. The half dozen other mills are running only at half time, as their yards are filled with lumber for which there is no demand. It may be stated that the lumber mill at Mosquito Harbor shipped to New York by direct steamer last year 20,000,000 feet of lumber and shingles. The copper mines at Mount Sicker are also closed. The city of Victoria has endeavored to assist in giving work to laborers, by making improvements not heretofore contemplated.

COAL SUPPLY FOR SAN FRANCISCO—RAILWAY WORK.

The principal industry on Vancouver Island is coal mining. Last winter there was a shortage of coal all over the Pacific coast, and the fuel was scarce, even here in Victoria, only 40 miles from apparently inexhaustible mines. All extra men possible to secure were engaged, but miners were scarce, and those at work were discontented, being paid wages agreed to when prices were lower.

The limit of the agreement as to wages paid at Nanaimo mines, on this island by a fuel company composed almost entirely of Americans, expired on October 1 last. The wage schedule then came up for revision, and it was some weeks before the scale was adjusted satisfactorily. At that time the company had contracts for the delivery of large shipments of coal at San Francisco, and fearing the outcome of the arbitration with the men, to protect themselves,

made arrangements for a certain amount of Australian coal to be delivered at San Francisco on the company's account. With the reaction of the last few months and the mild winter the demand for coal has fallen off. The fuel company is still bound by its Australian engagements, and the result is that the San Francisco market, which was formerly supplied by coal from Vancouver Island mines, is supplied by coal mined in the Antipodes, and on January 17, 250 men were laid off at the Nanaimo mines. The company announces that the length of time the mines will lie idle depends altogether on the revival of business in the San Francisco market.

The closing of these mines and consequent large addition to the number of idle men on this island was brought up in the local parliament on January 17, when the premier announced that the Canadian Pacific Railway, who now have over 200 men employed building an extension of the Esquimalt and Nanaimo Railway from Wellington to Alberni, via Nanoose Bay, would put an additional 500 men to work, the contract for grading 12 miles having already been let. This will relieve conditions somewhat.

ANTWERP DIAMOND INDUSTRY.

SERIOUS EFFECTS OF THE AMERICAN FINANCIAL CRISIS ON THE TRADE.

Consul-General Henry W. Diederich reports that nearly one-half of the 4,500 to 5,000 diamond cutters of Antwerp were thrown out of work through the failure of orders from the United States on account of the financial crisis. He continues as follows concerning the industry and trade:

The diamond trade of this city is one of the most important and valuable of Belgium. It is certainly the most exclusive trade in the world, and attempts are made on the part of cleavers, cutters, and polishers not to allow any outsider to become apprenticed, and in fact the decision on the part of the diamond manufacturers to introduce apprentices, owing to a lack of skilled labor, brought about a very serious strike two years ago.

About five years before this strike took place the men of the Diamond Cutters' Union succeeded in obtaining a promise from the employers that for five years no apprentices should be employed in the diamond factories and that the only new workmen should be those proposed by the union, and these were to be for the most part members of the diamond cutters' families. When this term of five years came to an end the manufacturers discovered that the trade was suffering for want of sufficient workers, and they decided to employ 500 apprentices. The strike which ensued resulted in a compromise, the employers reducing the number of apprentices to 300, and granting an increase of wages and shorter hours.

APPRENTICES—WAGES—EXCLUSIVENESS OF THE TRADE.

Apprentices are required to take a course of one year's instruction before being intrusted with regular diamond cutting. This begins by

learning the formation of a diamond, the number of facets to be cut, and the handling of the machinery. For the latter work they are given crystals to cut. When the year's instruction is over they begin to earn a wage of from $6 to $8 per week.

The Antwerp diamond industry comprises about 40 factories and employs 4,500 to 5,000 men. Diamond cutters are paid a wage of $12 to $16 per week, cleavers $20 per week upward, while the sorters receive $6 to $10 per week; thus the average wages amount to $13 to $14 per week.

Thirty-five years ago the diamond trade was in such flourishing condition that a good cutter earned as much as from $220 to $250 per week. This remarkable state of things, however, attracted the attention of workers from all over the country; keen competition ensued, with the consequent diminishing of wages.

The secrecy of the art of cutting and polishing diamonds is maintained so completely that it is difficult to introduce this industry anywhere, save through Belgian or Dutch emigrating cutters. Thus some of the Antwerp manufacturers have emigrated to the United States, where they now supply a good part of the demand for diamonds in that country from works they have established there. A similar attempt has been made in London, where there are from 200 to 300 cutters.

The famous Cullinan diamond given to King Edward VII by the Transvaal colonial government as a birthday present can not be cut in England and will be sent to either Amsterdam or Antwerp, where it will take at the very least six months to perform the work. The fact that Antwerp is noted for the cutting of large diamonds and that Amsterdam makes a specialty of small stones indicates that the Cullinan diamond will probably come here, although nothing definite has been decided.

DIAMOND CUTTING, CLEAVING, OR SAWING.

The diamond-cutting industry is divided into three distinct heads, viz: Cleaving (which is now beginning to be called sawing, on account of a new machine recently invented for the purpose), rough cutting (known as brutage), and final cutting and polishing. The first process is that of cutting a large rough stone from the mine into smaller ones, but this is avoided as much as possible, unless the manufacturer knows that the smaller stones will realize a bigger price than would the one large one. Cleaving is also resorted to on those stones whose surface is too rough to enter upon the process of brutage. It follows therefore that the progress of cleaving is not resorted to in all cases, a majority of the stones being at once submitted to brutage.

In cleaving or sawing, the rough stone is placed in a metal receptacle with the side to be cleft downward, when a mold is placed over it into the top of which liquid aluminum is poured. This takes the shape of the mold and, after cooling, firmly secures the stone in its position, the mold being then removed. The cutting tool is a circular saw, about 4½ inches in diameter, made of soft copper, the edge of which is prepared with diamond dust and oil. The rough stone is then set with a slight pressure against the side of the saw, and remains

in that position frequently as long as two weeks, according to the degree of resistance of the crystal. To superintend this operation the diamond cleaver has to be a man of long experience and natural skill.

Some manufacturers cut the products of cleavings into layers as thin as a heavy sheet of paper, and from these layers are cut what is known to the trade as the Antwerp rose, a specialty of this market. The circular saw, with its special apparatus for holding the diamond, was invented in the United States by a Belgian working there at the time.

ROUGH CUTTING (BRUTAGE) AND CUTTING AND POLISHING.

Rough cutting or brutage is a process which might be termed that of "diamond cut diamond." Two stones of similar size and degree or hardness are fitted into metal caps with cement. One of these caps is fitted to a rotary machine, of which the stone forms the center. The other cap is fitted to a long handle, and the cutter places this against the revolving stone, which is the first one to become smooth. Then the diamond held by the cutter is in turn put in the rotary machine, etc. The diamond dust produced by the rubbing of the stones together is carefully preserved and used with a mixture of oil on the final polishing disks as well as on the blade of the circular saw.

For final cutting and polishing the product of the brutage is set in position at the exact angle, either in a copper holder, into which it is firmly fixed by means of a clamp or held in position by a mold of lead, which has been heated for the purpose. For this work great skill is required on the part of the cutter, as many stones of one-eighth of an inch and less in diameter and weighing between 1 and 2 grains have as many as from 50 to 100 cut faces. When the stone is properly held by the clamp or mold it is pressed by the weight of the same against a revolving disk of soft steel, rotating horizontally at the rate of 3,000 revolutions per minute. The disk is covered with a film of diamond dust and olive oil. After this finishing process the diamond is marketable.

AMERICANS THE GREAT DIAMOND PURCHASERS.

Owing to the peculiar conditions of this trade, it is impossible to give correct statistics, as the custom-house at Antwerp has little control over exportations, the greater part of which are sent by post. Almost three-fourths of the world's production of diamonds are bought by the people of the United States. The declared value of these gems, covered by invoices presented at the American consulate-general at Antwerp during the year 1907, amounted to $5,230,519 for cut diamonds and $1,053.057 for rough stones. The bulk of this business was done during the first nine months of the year, as there were practically no diamonds sold to the United States in the Antwerp market during November and December, owing to the financial crisis. What an instantaneous effect financial slumps will have on the selling of luxuries may be seen from the falling off in the demand for diamonds on American account, as shown in recent statistics from New York, according to which the cut diamonds imported amounted in November to a value of only $593,000, as compared with $781,000 in October, $1,311,000 in September, $2,360,000 in

August, and $2,674,000 in July, the uncut products showing a similarly heavy shrinkage.

While the general business depression lasts the diamond trade will also suffer, but it is remarkable that while many commodities have fallen in price, and some of them enormously so, the price of diamonds, which are mere luxuries, has remained firm. This is easily accounted for if it be true that the powerful competitors in the diamond fields of South Africa have effected an agreement for a term of years, subject to a semiannual revision, as regards the price and quantity of stones to be taken over by the diamond syndicate at London. These are now said to be restricting the output, and consequently keeping the prices as high and as firm as possible. As long as all the mines are practically owned or controlled by this combination, forming one of the most powerful monopolies in the world, there is but little prospect of a reduction of prices in the diamond market.

COAL MINING IN GERMANY.

HIGH WAGES AND OTHER CONDITIONS WHICH INCREASE FUEL PRICES.

An outline of the conditions in the coal-mining industry in the Ruhr district of Germany is furnished by Consul H. J. Dunlap, of Cologne, with added information relative to the manufacture of coke, as follows:

The coal district of the Ruhr, in west Prussia, is one of the most important and extensive in the Empire. Owing to the high prices for coal the official reports regarding wages of miners in this district for the third quarter of 1907 were awaited with considerable expectancy, owing to the connection between the wages paid for mining and the prices at which the product is sold.

To the public demands for a reduction in the price of coal the mine owners reply that it is impossible, owing to the high wages paid miners, which are still increasing; besides that the new laws regulating the payment of sick benefits and pensions to disabled miners and their families will, even if rejected by the miners, considerably increase the expense to the mine owners by many million marks. At the recent meeting of the National Miners' Congress in Berlin the leaders of the miners' unions in the Ruhr district complained of much want and misery among their members.

The year 1900 has long been cited as a period of high wages, but in 1906 the miners began a movement for higher pay. This failed during 1906–7, because all statistics, even those of the miners' associations, showed the demands of the workmen to be unjustified, and the claims of the mine owners that they were paying all the wages that the business would stand were verified.

WAGE SCALE AND ASSESSMENTS—NUMBER OF MINERS EMPLOYED.

In the following comparison of the wages per diem of coal in the Ruhr district only the three chief classes of miners are considered. The young employees, who number about 3½ per cent of the whole, are not considered in the statistics. The amount of wage given is the net sum paid after all deductions for insurance and invalid rates. Salaries paid officials, office employees, and inspectors are not in-

cluded. The comments made in the official report follow the statement, which is as follows (mark=23.8 cents):

Classes of employees.	1900.	1905.	Third quarter, 1907.	Increase, third quarter, 1907, over—	
				1900.	1905.
	Marks.	*Marks.*	*Marks.*	*Per cent.*	*Per cent.*
Miners	5.16	4.84	6.09	18.4	25.8
Other underground workers	3.36	3.40	4.09	21.7	20.3
Adult laborers	3.32	3.42	3.90	17.5	14.0
Average	4.18	4.03	4.94	18.2	22.6

It may be seen from the table that wages have been increased about 20 per cent during the last eighteen months. No other class of workmen can show such an increase. On the other hand no one should fail to recognize the hardship of a miner's life and the danger connected therewith. In spite of all the miners of the Ruhr district maintain their supremacy among all classes of workmen. In addition to the wages, in many districts the miners purchase their coal at reduced rates in the winter, and, in some localities, are specially favored with cheaper prices for potatoes. Many thousands of them are housed in much better buildings in some of the lodging houses built by the mining companies, which are let to them on reasonable terms. Can any other class of workmen show such advantages?

The mine workers are required to pay large sums for the purpose of invalid and accident insurance. In 1905 a member of the coal miners' association of Bochum had to pay per annum, on the average, 27.15 marks for sick fund, 39.80 marks for pension fund, and 8.87 marks for invalid fund, a total of 75.82 marks ($18.04). To these funds the mine owner is required by law to contribute as much or more. Taking these facts into consideration and also the fact that the new law regulating these funds will add at least 10,000,000 marks to the expenses of the mine owners in this district, an increase in the cost of fuel to the consumer is most probable.

The number of adult employees in the Ruhr district increased during the second and third quarters of 1907 from 288,833 to 292,309. To this might be added the miners in Rhenish Prussia and the further increase in this district during October and November, and it would be safe to say that the total would amount to 310,000 men employed at the present time in the Rhenish Westphalian mining district, in which number the officials, office force, supervisors, and inspectors are not included.

SUPERIOR METHODS IN COKE MAKING—SECRET OF GERMAN SUCCESS.

Experiments under a competent expert have been made in Prussia during the past few months with western Pennsylvania coal to determine its comparative value with German coals, and the results of the comparison are said to be highly gratifying and show the superiority of the Pennsylvania article. All German coals for coking have to be washed, while such is not the case with the American coals tried here.

The experiments show that a great saving in coke making would be brought about by the utilizing of the by-products. If the new discoveries are as successful as is now anticipated, it will not be long before the manufacture of coke, instead of being done at the mines, will be brought near to the furnaces in large cities. Coke is a costly article to transport, owing to its light weight, while coal has a low freight rate. Instead of allowing the by-products of gas and

ammonia to escape into the air, they will be used for smelting and illuminating purposes, and the small coke, of which there is an enormous quantity, can be used for fuel, as it will be near a good market, while at present it is simply thrown away as not worth the freight.

The export of aniline dyes made from coal tar from this district to the United States for the fiscal year ended June 30, 1907, was valued at $1,716,738, all of which might just as well have been made in the United States. The new system of coke making, which proposes to make use of all the by-products, will call renewed attention to this source of revenue.

The attention given by the German manufacturer to the saving of by-products and the utilization of every possible loss from his perfected article has been one of the most potent means by which he has attained such progress in securing the markets of the world. Not only cheaper labor, but great economy in every branch of manufacture has made it possible for him to compete with goods made in countries which have not only a high tariff, but one made especially to protect other manufacturers from his competition. These facts are beginning to dawn upon the minds of men who have wondered how a nation which purchases raw products from foreigners, manufactures them into merchantable articles, and sends them back to the country of origin can compete with articles made in that country, paying freight and other expenses both ways, as well as the duty.

LABOR CONDITIONS IN IRELAND.

COMPARISON OF THE COST OF LIVING FOR WORKINGMEN IN THE CITIES.

Writing from Dublin, Consul Alfred K. Moe states that a detailed report has recently been issued by the British Board of Trade dealing with working people's rents, housing, and retail prices, together with the standard rate of wages prevailing in certain occupations in the principal industrial towns of the United Kingdom. From this the consul derives the following relating to Ireland:

It is clearly set out that the report does not deal with earnings generally, but only with the standard rates of wages prevailing. Selected occupations are considered in another report which is very shortly to be made public by the board of trade. Arthur Wilson Fox, in a prefatory note, says:

> The object of the present inquiry was to obtain a standard and comparison of the cost of living. Fourteen officers of the board of trade took part in the local investigations. Assistance was given by the local authorities, town clerks, borough treasurers, medical officers of health, sanitary inspectors, rate collectors, clerks to guardians, overseers, surveyors of taxes, house and estate agents, property owners, tradespeople, cooperative societies, etc. The information was checked by personal visits to working-class dwellings in each town. Rents, prices, and rates of wages in the middle zone of London were taken as standards, and index numbers calculated for each of these items in every town. For Scotland and Ireland supplementary standards were obtained by the adoption of Edinburgh and Dublin, respectively, as bases.

The dominant factor in the housing of Dublin is the prevalence of subletting. This means that with each succeeding lease the rent goes up, as the lessee usually acquires the lease as a matter of investment. A very large part of the population in Dublin is accommodated in

tenements of a small size, that is, in one or two rooms. Of the 52,263 families in this city at the time of the 1901 census, 60 per cent had only one or two rooms, 37 per cent being housed in one room, and 23 per cent in two rooms.

While these figures resemble the Scotch, there is the difference that in Dublin the working people live in old-fashioned houses long since abandoned by their wealthy owners and now let out to exploiting agents who in turn rent them by single rooms to tenants, each house containing from five to seven families, and often more, whereas in Scotland blocks of dwelling houses or flats, constructed for the particular purpose, have one or two rooms suitable for the accommodation of the workingman and his family. The Dublin houses are in very many cases in a most unsatisfactory condition; they are old and, of course, not suited to modern needs. They are deficient in sanitary accommodations and many of them can not be kept in proper repair because of their age and dilapidated state.

RENT CHARGES AND LIVING EXPENDITURES.

London shows a remarkably high level in rents as compared with the rest of England, and in Edinburgh the rents are only slightly in advance of those in other Scotch towns. In Dublin, however, the rents are very much higher than in any other town in Ireland. Apart from Dublin, tenements of one or two stories with two, three, four, or five rooms prevail in other towns. In Dublin the working people are housed in tenement houses, such houses having been formerly private residences and occupied by the wealthier classes. The rents in Limerick, Cork, Belfast, Londonderry, and Waterford are from 31 to 47 per cent less than in Dublin.

The following shows the predominant rents paid for the various sizes of tenements per week, including all rates: One room, 2 to 3 shillings (49 to 73 cents); two rooms, 3 to 4½ shillings (73 cents to $1.10); and 4 rooms, 6 to 8 shillings ($1.46 to $1.95).

The differences, especially between Dublin and the other towns, are very marked. As regards Dublin and Belfast, the two largest cities in Ireland, the difference may to some extent be accounted for by the fact that in the former the demand for workingmen's housing accommodation is rather in excess of the supply, while in Belfast at the time of the inquiry there was a large number of workingmen's houses empty. In the case of Belfast, however, land for building purposes is cheap, while the local rates are much lower than in Dublin. In the latter city the rooms are usually large, and the accommodation per room is greater than in Belfast or in the other Irish towns.

For six Irish towns the differences in prices are not very great. In Waterford and Belfast, the lowest and highest towns, the difference is mainly due to the lower price of eggs and meat in the former town. The price of coal was practically the same in all Irish towns. In rents and prices Dublin leads the list, but Belfast and Limerick follow closely, and Cork, Londonderry, and Waterford are 12 to 16 per cent below Dublin. It is estimated that the combined expenditure on rent, food, etc., outside Dublin would be from 7 to 15 per cent less than in Dublin.

The wage building rates are higher in Belfast than in Dublin, and are lower in County Limerick, Londonderry, and Waterford than in Dublin.

UNITED KINGDOM COMPARISONS.

Taking the mean of the rents and prices combined of all the Scotch and Irish towns, the Scotch towns are 5 per cent below London, and the Irish 13 per cent. Comparing the Scotch and Irish towns with England and Wales, and other than London, the rents and prices combined are higher in Scotland than they are in the English provinces, whereas the rents and prices combined in Ireland are on a level with Yorkshire.

In the matter of wages the mean rate in the building trade in Scotland is 14 per cent less than in London; about 2 per cent less than in the northern counties, Lancashire, the Midlands, and Wales. In Ireland the mean rate in the building trade is 20 per cent less than in London and from 5 to 11 per cent less than in the English provinces.

In the engineering trade the mean rate in Scotland is 17 per cent less than in London, and from 2 to 9 per cent less than in England and Wales, other than London. In Ireland the mean rate is only 10 per cent below London, and slightly higher than in England and Wales, other than London. These figures apply only to skilled labor.

STOCK COMPANIES IN GERMANY.

GOVERNMENT STATISTICS SHOW EXTENT OF INDUSTRIAL OPERATIONS.

The German bureau of statistics has just published a report on stock companies in Germany with figures up to the year 1907, from which Consul Carl Bailey Hurst, of Plauen, compiles the following:

It shows that the Federal authorities have for some years been arranging to keep permanent statistics of private companies in Germany. The report in question is the beginning of the investigations and furnishes the basis for consecutive statistics in this line. The results have not been reached altogether through official channels. It appears that there are 5,060 stock companies, with a nominal capital of 13,848,600,000 marks ($3,295,966,800), which includes 108 so-called Kommandit companies, with a capital of 577,510,000 marks ($137,447,380). It further embraces 27 German stock companies working in foreign countries and 11 German colonial companies. The actual paid-in capital of all the companies is not given, but is estimated at about 13,725,000,000 marks ($3,266,550,000). The reserves, loans, or mortgages are not stated.

The total number of companies is divided into 23 classes, of which may be mentioned the food and beverage industries, 904 companies, with 1,032,500,000 marks ($245,735,000) capital; banks, etc., 775 companies, with 4,427,000,000 marks ($1,053,626,000) capital; machinery and allied industries, 533 companies, with 1,624,400,000 marks ($386,607,200) capital; transportation companies, 479, with 1,517,600,000 marks ($361,188,800) capital; stone and earth industries, 357 companies, with 416,900,000 marks ($99,222,200) capital; textile industries, 342 companies, with 581,500,000 marks ($138,397,000) capital; mining, smelting, salt, and peat industries, 255 companies, with 1,311,200,000 marks ($312,065,600) capital; chemical

industries, 140 companies, with 403,600,000 marks ($96,056,800) capital; insurance companies, 136, with 608,200,000 marks ($144,751,600 capital.

PERCENTAGE OF CAPITAL EMPLOYED.

According to the amount of capital, the banking houses include 32 per cent of the total; in machinery and allied industries the machinery manufactories have a capital of 610,000,000 marks ($145,180,000), electric plants 593,000,000 marks ($141,134,000), and electrotechnical supplies 297,000,000 marks ($70,686,000); the transportation companies include short branch roads not under State control and street railways, with 677,000,000 marks ($161,126,000) capital; shipping, with 460,000,000 marks ($109,480,000) capital; railroads, 303,000,000 marks ($72,114,000) capital; the food and beverage industries include breweries and malt houses, with 608,000,000 marks ($144,704,000) capital.

Of the total number of companies given, 488, or 9.6 per cent, work each with a capital up to 100,000 marks ($23,800); 45.9 per cent, or 2,323 companies, from 100,000 marks ($23,800) to 1,000,000 marks ($238,000) capital each; 40.4 per cent, or 2,041 companies, from 1,000,000 marks ($238,000) to 10,000,000 marks ($2,380,000); 3.9 per cent, or 199 companies, from 10,000,000 marks ($2,380,000) to 100,000,000 marks ($23,800,000); and 0.2 per cent, or 9 companies, with over 100,000,000 marks ($23,800,000) capital.

Among the latter may be mentioned the Deutsche Bank, with 200,000,000 marks ($47,600,000) capital; the Dresdener Bank and the Krupp Gun Works, each with 180,000,000 marks ($42,840,000) capital; the North German Lloyd Steamship Company, with 125,000,000 marks ($29,750,000) capital, and the Hamburg-Amerika Line, with 120,000,000 marks ($28,560,000) capital. These 9 companies united comprise 10 per cent of the entire capital of the 5,060 German stock companies. It appears that 904 of the companies given were founded in the years 1901–1906; 1,773 in 1891–1900; 1,857 in 1871–1890; 395 in 1851–1870, and 83 before 1851, of which 24 are insurance companies, beside textile industries, transportation companies, sugar refineries, banks, and coal mines. Six hundred and ninety-seven of the stock companies are situated in the Rhine country, while industrial Saxony is represented by 440 companies.

MARINE PRODUCTS.

BRITISH INDIA.

REPORTED EXHAUSTION OF THE BURMA PEARL FISHERIES.

Consul-General William H. Michael writes from Calcutta as follows in regard to the pearl fisheries of the Burmese coast:

The supply of mother-of-pearl shells from Mergui and Tavoy islands, which lie off Lower Burma, has been declining so seriously in recent years that to ascertain definitely if the pearling grounds are really becoming exhausted to such a degree as make pearling unproductive two experts were sent out by the secretary of state in the early part of last year to investigate the pearl banks of the islands and to study the life history of the Mergui pearl oysters. The experts have not yet sent in their report, but there is reported reason to

believe the banks are becoming exhausted and are in need of considerable rest. Shells are now more difficult to obtain and are less numerous than formerly.

It was at one time proposed to close the pearling grounds, but the native pearlers were unanimous in opposing any such step. They declared that the productiveness of the banks has not appreciably diminished and the fact that the shortage in the supply obtained recently was entirely due to the class of divers having deteriorated. It is admitted that there is some truth in this argument, but all the pearling leases are owned by natives, who naturally are in favor of open banks. Formerly Australian pearlers worked there, but they left in 1900, owing to the diminution in the supply of the shell, on which they depended for their profits rather than on the pearls. The only European pearlers whose advice is now available, though they have abandoned pearling in favor of tin mining, are in favor of closing the fisheries.

Inquiries among divers themselves afford no useful information as to the habits of the pearl mollusk. They work more after custom and superstition than by observation. An application was made as far back as 1904–5 by the syndicate which leased the Ceylon pearl fisheries for the grant of a similar lease of the Mergui and Tavoy pearl fisheries and for pearling rights in a block off the coast of Tavoy, but the application was suspended pending the result of the investigation of the two experts sent out by the secretary of state of Burma.

JAPAN.

POSSIBLE USE OF VEGETABLE ISINGLASS IN PHOTOGRAPHY.

Consul-General Henry B. Miller, of Yokohama, makes the following report on the export of agar-agar (vegetable colle or isinglass) from Japan:

According to the local press it is stated that agar-agar, derived from seaweed, may possibly replace gelatin as a basis for photographic processes. It is further stated that lecturing before the Royal Photographic Society W. F. Cooper said that it has certain chemical advantages over its rivals and will in time mark a revolution in photographic emulsion making.

The agar-agar, known as colle vegetable or isinglass, is much produced in this country, and the exports of the same are as follows:

Countries.	1904.	1905.	1906.
British India	$1,852	$4,947	$10,553
British Straits Settlements	18,012	7,365	8,498
China	187,468	194,463	131,286
Korea	906	1,925	2,180
Dutch Indies	29,899	31,429	38,357
France	25,897	22,096	29,691
Germany	37,480	35,021	46,918
Great Britain	37,480	10,920	17,472
Hongkong	149,665	135,069	120,376
United States of America	15,153	12,143	35,358
Total, including exports to other countries	506,800	461,064	497,847

The total exports for eleven months ending November 30, 1907, amounted to about 2,000,000 pounds, valued at $488,715. The aver-

age price per pound exported in 1906 was 25 cents; in 1905 22 cents, and in 1904 21 cents.

WHALE FISHERY PRODUCTS AND PRICES.

Consul George H. Scidmore, of Nagasaki, reports that the supply of whale oil in his consular district is about 11,910 imperial gallons per month, and the price therefor ranges from $4 to $5 per "to," or 3.97 imperial gallons. Limited quantities of whalebone are on the market, the price for which per picul (132.3 pounds) is as follows: Finback, $11; humpback, $4.50, and right whale, $50.

MINING INDUSTRY.

ASIATIC TURKEY.

DECREASE IN PRICE AND GREATER DECREASE IN OUTPUT OF CHROME.

The following report, covering the decadence of chrome mining, and the causes thereof, in Asia Minor, is furnished by Consul Ernest L. Harris, of Smyrna:

Chrome is one of the valuable ores of Asia Minor. The most important mines formerly worked were those of Daghardi in Broussa. The mining center which has produced and exported the most chrome in Asia Minor is the locality termed the basin of Macri, of which the port of that name was the chief place for shipment. This port is in the vilayet of Smyrna, situated on the southern coast of the peninsula.

Considerable chrome was also shipped through the port of Smyrna. The mines are located in the mountains near Sarakeui on the Aidin railway line. There are also many other chrome pits which have been left unworked on account of the difficulties connected with transportation.

FALL OF PRICES—CRUDE HANDLING OF THE ORE.

Twenty years ago chrome ore sold in this neighborhood for as much as $100 per ton. The same quantity and quality can not be sold delivered to-day f. o. b. Smyrna for more than $17 per ton, and it often only brings $15. Chrome, like antimony, has dropped so much in price that it scarcely pays to mine it, and certainly not in districts much distance from the railway. None of the mines have even been worked on a scientific basis with up-to-date machinery. As the chrome of other countries comes on the world's markets in increasing quantities, that of Turkey must necessarily decline in the face of keen competition, not on account of the quality of the ore, but from the difficulties of internal transportation, if for no other reason.

Chrome in Asia Minor is usually found on mountains from 4,000 to 5,000 feet high. It is removed from the pits to the railway station or market on the backs of donkeys and camels. The surer-footed donkeys are used in the higher altitudes, and the camels for the plains. This method usually involves two or three transshipments between the point of origin and the port of Smyrna. It usually takes one donkey a week to carry 400 pounds of chrome ore from the pits on the mountain tops to the camel stations below. It then takes five camels one day to transport a ton of chrome over a distance of 15 miles. The last shipments of chrome made from Smyrna were 1,500 tons in 1906.

The largest firm which ever handled chrome at Smyrna has returned all its mines to the Turkish Government, as the annual tax upon the ownership of these mines amounted to more than they could be worked for at a profit.

The New Caledonia chrome mines are worked by convict labor, and the mineral can therefore be produced at prices which practically preclude competition.

VENEZUELA.

GOVERNMENT CONCESSION FOR EXPORTATION OF MAGNESITE.

Consul Thomas P. Moffat, of La Guaira, reports a recent concession by the Venezuelan Government, granting the exclusive privilege, for a period of twenty-five years, of exporting magnesite found on private lands in the island of Margarita. The Government is to receive 1 bolivar (19.3 cents) on each ton exported. It is estimated that the annual output will be from 12,000 to 15,000 tons. Work has been commenced on several properties, and shipments will probably be made very soon. A private contract is said to have been made between the grantee and an American company for the entire quantity exported.

LEATHER GOODS.

BELGIUM.

PROSPEROUS CONDITION OF BOOT AND SHOE INDUSTRY.

Consul W. P. Atwell, of Ghent, states that the boot and shoe industry of Belgium has in late years developed to important proportions. He continues:

According to published statistics, there are more than 200 factories in the country, all well-equipped, and giving employment to more than 200,000 hands. Several of the more important factories can turn out as many as 3,000 pairs of shoes a week. At this rate of production it is easy to understand that the supply considerably exceeds the demand. For this reason attempts have recently been made to export the Belgian made shoe, which is of an inferior quality and sells at a low price. Efforts have been principally directed toward England, where, after much trouble and sharp competition, some important orders have been registered. To further the export trade the Belgian shoe factories have now formed a trust, known as the Union of Manufacturers of Shoes for Export Trade. A few months ago the boot and shoe industry and, in general, all industries connected with the manufacture of leather were greatly disturbed by a sudden and unaccounted for increase in the price of leather.

Notwithstanding the low price of the native article, the American made shoe is becoming more and more popular, particularly with the better class of people. Belgian manufacturers, noting the increasing demand for American styles, are now imitating the American shoe.

There would appear to be a good market in this district for American made rubbers. The article sold here is heavy, awkward in form, and of a very inferior quality, and sells at a high price as compared with the American made rubber.

BRITISH INDIA.

GOVERNMENT EFFORTS TO ENCOURAGE THE CHROME TANNING INDUSTRY.

The Administration Blue Book, referring to the chrome tanning industry for 1906–7 in the Madras Presidency, is quoted by Consul-General William H. Michael, of Calcutta, as follows:

The government factory is reported to have continued to do good work, financial results have improved, custom has been extended to all parts of India, but though general satisfaction was given in the hides turned out, the qualities are stated to have been somewhat uneven. This variation is said to be largely due to the fact that all the hides worked at the government factory were limed and unhaired in outside tanneries, and to obviate this in future the government has provided funds for the necessary plant, which will be erected at Perambur. On the other hand, the record of private enterprise in connection with the industry is said to have been not altogether satisfactory, the Madras Chrome Leather Industry, Limited, with a nominal capital of $33,000, having ceased to do business. Elsewhere progress in the industry is indicated by the opening of a chrome leather boot shop in Madras, which is doing a considerable business, and the starting of a small factory at Suramangalam, in which the local tanners are interested. The Madras School of Arts is also aiding the development of the industry by the opening of a department for the sale of chrome leather manufactures.

The consul-general says that in his judgment the chrome leather manufactured in India does not compare with the American-made leather either for softness, flexibility, or finish.

GERMAN PUBLIC SERVANTS.

RAILWAY, POST, AND TELEGRAPH EMPLOYEES IN THE EMPIRE.

Consul Frank S. Hannah says that according to statistics recently published in a Magdeburg paper the number of employees in the service of railway, post, and telegraph in Germany has now reached the unprecedented number of one million. The consul further summarizes:

In the year 1906 the entire number of employees, including the apprentices and women engaged in the service of the railroads, was 648,437. In the postal service at the end of the same year 296,738 persons were employed. In these figures for the post are included all employees of the telegraph and telephone service. This gives a total number of employees at the end of 1906 of 945,175, and a proportionate increase since then would make the present number one million. Germany, with its approximate population of 63,000,000 people has, therefore, for every 60 inhabitants, about 1 employee of the railroad or post.

The railroad employees received during the year 1906 970,000,000 marks ($230,860,000) and for the year 1907, for which the figures have not yet been published, the amount thus expended is estimated at 1,000,000,000 marks ($238,000,000). Similar statistics for the post and telegraph are not published, but, taking into consideration the number of persons employed, this amount can not be less than 500,000,000 marks ($119,000,000). This makes a grand total of wages paid to railroad and postal employees of 500,000,000 marks ($357,000,000).

The German post-office department handles the largest amount of mail matter and has the largest number of employees of any European nation. The total number of pieces of mail handled during

the year 1906 in Germany was nearly 8,000,000,000 pieces, while in Great Britain and Ireland, which occupy the second position, the number did not quite reach 5,000,000,000. This large amount of business and greater number of employees may be partly explained not only by the excellence of the postal system in general, but by its almost universal use by the people.

CEMENT TRADE.

JAPAN.

INCREASED NATIVE PRODUCTION REDUCES IMPORTATIONS.

The following newspaper item relating to the cement industry in Japan is furnished by Consul-General Henry B. Miller, of Yokohama:

The total monthly output of cement in Japan, which was not more than 600,000 barrels two or three years ago, is believed to have increased to about 1,300,000 barrels, the producing capacity of every cement company being increased by 50 per cent. The industry was encouraged by the recent activity of water-power electric works, water works, and other engineering works. Now the import of cement is materially checked. By the financial depression of late business activity has died away, however, and the cement companies newly promoted have delayed the construction of factories, while the older companies have reduced output and are now watching the progress of events.

AUSTRALIA.

IMPORTS AND SELLING PRICE—ENLARGING LOCAL FACTORIES.

In answer to inquiries Consul Orlando H. Baker, of Sydney, New South Wales, furnishes the following information:

The imports of cement into Australia in 1906 amounted to 88,919,936 pounds, imported from the following countries: Germany, 50,441,990 pounds; United Kingdom, 34,648,653 pounds; United States, 257,152 pounds; other countries, 3,572,141 pounds. The wholesale price at Sydney varies, but is at present about $2.50 per cask of 375 pounds. The cement works in New South Wales produce about 1,000 tons per week, but they will soon be enlarged.

PIG IRON PRODUCTION.

COMPARISON OF UNITED STATES RETURNS FOR FOUR YEARS.

James M. Swank, general manager of the American Iron and Steel Association, gives the pig-iron production in the United States in 1907 as 25,781,361 gross tons, or somewhat in excess of preliminary estimates. The following table gives the half yearly production for the past four years in gross tons:

	1904.	1905.	1906.	1907.
First half	8,173,438	11,163,175	12,582,250	13,478,044
Second half	8,323,595	11,829,205	12,724,941	12,303,317
Total	16,497,033	22,992,380	25,307,191	25,781,361

The production in the first half of 1907 was much the largest for any six months in the history of the country, and promises to stand as a record for some time.

NICARAGUAN PAPER CONCESSION.

EXCLUSIVE RIGHT TO MANUFACTURE GRANTED BY GOVERNMENT.

Consul Frederick M. Ryder, of San Juan del Norte, advises that the president of Nicaragua has granted, and the National Legislative Assembly has approved, a concession for the manufacture of paper, the details being as follows:

Juan Carlos Serrano has been given the exclusive right to manufacture paper of all kinds from such raw materials as he may acquire in the Republic; in addition to the product of the Government forests, the contract also monopolizes the manufacture of paper from cotton, rags, straw, sawdust, barks, and all other materials, covering a period of eight years from December 18, 1907, the date Congress approved of the act.

Mr. Serrano is obliged to construct a paper mill, at some convenient location, within eighteen months from above date; free entry is granted for all material used in construction of the plant, for the machinery equipment, chemicals, and everything necessary for the manufacture of paper and maintenance of the enterprise. The capacity of the mill, as well as the modern character of its machinery, must be equal to any demands which may be made upon it for the requirements of the Republic.

In return for the privileges granted, and that "the people may derive benefit from the establishment of the new enterprise," it is stipulated in the contract that "the concessionarie is obliged to instruct ten young men (whom the Government shall designate) in the art of modern paper making." The product is to be sold as low as possible, and the Government is to be furnished its supply of paper at a discount of 20 per cent from the established price.

The concession, including all of its rights and privileges, may be transferred to an individual or syndicate who can assure the Government of its ability to carry out the provisions of the contract.

JAPANESE WATER POWER.

LARGE ELECTRICAL DEVELOPMENT POSSIBILITIES—PRACTICAL NEED.

Consul-General Henry B. Miller, of Yokohama, invites attention to the following report of an electrical expert on the possibilities of development of electrical power in Japan:

In the case of one power site on the Tashiragawa the construction of a tunnel 3½ miles long would, it is stated, secure about 66,000 horsepower, and at another power site by means of about 10 miles of tunnel and a certain amount of open canal construction 150,000 horsepower could, it is reported, be secured. In the first instance there is a good reservoir site for storage, while in the second instance advantage would be taken of natural lakes. These sites, and others which have been surveyed, are in the Fujiyama district. Additional sources of power are near Nikko, where Lake Chuzenj would form the large reservoir, and where with 4 miles of tunneling a fall of 2,000 feet could be secured; also in the Lake Inawashiro district, where the construction of 4 miles of tunneling would provide upward of 50,000 horsepower. An inspection of the principal sites and a study of the rainfall statistics over many years point to the probability of the initial plants giving, even during periods of drought, 300,000 horsepower.

A favorable feature of the scheme is that the power sites provisionally selected are located within a comparatively short distance of Tokyo, where at the

outset the bulk of the power would be taken. Between the capital and the sites referred to there is a minimum transmission distance of 80 miles and a maximum of 150 miles. It is estimated that the present requirements of Tokyo represent 48,000 horsepower, and that plants which will call for an additional 20,000 horsepower are in process of erection. These figures do not, however, include the electric road from Tokyo to Yokohama, or the elevated road which is being constructed by the Government in Tokyo. One of the chief power sites is within 135 miles of the old capital, Kyoto, and Osaka, the Manchester of Japan, is only 160 miles distant. It is believed with the growth of the interurban tramway systems in Japan there would be an immense field for cheap water power. Owing to the high price of coal the cost of steam power is high, and the utilization of water power should prove an important factor in the industrial development of Japan.

LONDON'S ELECTRICITY.

AMOUNT USED AND COST TO CONSUMER DURING LAST YEAR.

Consul-General Robert J. Wynne reports that a return was issued by the British Board of Trade recently showing the consumption of and prices charged for electricity by the London authorities and companies whose undertakings lie within the Metropolitan Police District, from which he secures the following facts:

A total of 87,000,000 units was delivered for all purposes by local authorities last year, and 213,000,000 by companies. The prices charged per unit compare thus:

	Local authorities.	Companies.
	Cents.	*Cents.*
Power and heating	2.60	2.90
Private lighting	7.34	7.66
Public lighting	3.70	3.24
Average receipts for all purposes	5.126	6.06

It will be seen that the average of the municipal electricity is less than that supplied by private companies, but there is nothing in the report to show the financial stability of the various undertakings. West Ham enjoys the cheapest electricity in the whole district, the local council charging 1.9 cents for power and heating, 5.4 cents for private lighting, and 2.78 cents for public lighting, the average price received by the council per unit, taking into account the quantity delivered in the different classes, being 2.96 cents.

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CROPS AND FOODSTUFFS.

OLIVE CULTURE.

GREECE.

UNUSUALLY GOOD YIELD IN PELOPONNESUS AND CORFU.

Consul Edward I. Nathan, of Patras, reports that the olive crop for the season 1907–8 in the Peloponnesus, Greece, is unusually large, especially in comparison with that of the previous year, which was almost a total failure. The consul gives the following trade and cultural information:

The former season's nonproductiveness was due to the excessive rains and hail storms then prevailing, while this season the favorable weather conditions served to increase the size and improve the quality of the crop. In the province of Achaia, in the northwest of the Peloponnesus, it is estimated that the crop will aggregate 300,000 to 350,000 okes (about 850,000 pounds, 1 oke being 2.8 pounds). The previous year's crop in the same province was only 80,000 okes. In the district of Pharron, in the north of the Peloponnesus, this crop is estimated at 100,000 okes (282,685 pounds), an increase of one-third. In the southern provinces of Messinia and Laconia the crops are reported to be unusually large and the olives of a superior quality, due in a great measure to generous rains after a prolonged period of dryness. The yield of olive oil from the latter districts alone is estimated at over 5,000,000 kilos (about 5,000 tons.).

While there is a large and increasing quantity of olive oil exported to the United States, the exportation of olives is not as great as might be expected. In fact the entire olive crop available for export is very small, owing to the destruction of the olive trees in 1900 to make room for the cultivation of currants, then at a premium, because of the needs of France, owing to the failure of the latter's grape crop.

BEST QUALITY—CORFU'S PRODUCTION.

The olives exported from the Peloponnesus are black in color and are sent pickled in brine. The finest variety is grown to the north of the Peloponnesus, on the plain about Amphissa, on the north coast of the Gulf of Corinth. About 90 per cent of the crop of this district is exported to the United States, largely through Patras, the chief port of the Peloponnesus. Kalamata, in the southwestern part, is another important place for export.

Corfu, a large island lying northwest of Greece, also exports considerable olive oil, mostly to Russia, England, and France. Only about 100 tuns of 252 gallons each were shipped to the United States from Corfu during 1907, while during 1906 some 300 tuns had that destination. The latter were, however, what remained of the previous year's abundant crop.

The crop in Corfu for the season 1907–8 is very large and is expected, according to information sent from there by American Consular Agent C. E. Hancock, to yield about 14,000 to 15,000 tuns of olive oil, ranking second only to the crop of 1905, the largest known crop for thirty years. The crop for 1906 was practically a failure, producing only about 150 tuns of oil.

BENEFIT OF A SNOWFALL.

Previous to 1905 there had been a succession of very poor crops, and it was thought almost generally that a good crop would never again be seen and that the trees had become hopelessly diseased, but a comparatively heavy fall of snow in the early part of 1905 with a hard frost following seems to have killed the germ of the fly that had been so increasingly destructive to the fruit in the previous fifteen years. This rendered possible the phenomenal crop of the season 1905–6.

In Corfu, owing to the great age and large size of the trees, the olives are allowed to ripen and fall to the ground and then gathered. In the Peloponnesus, on the other hand, the harvesting method usually employed is to beat the trees with long wooden poles, the severe shaking causing the olives to fall to the ground. It is calculated that the yield is only one-fifth to one-third of that when the olives are allowed to fall to the ground. The quality of the oil resulting from the former method is, however, somewhat superior.

The harvest periods in the Peloponnesus and in Corfu are also different. In the former the beating commences early in November and ends with the close of the year. In Corfu olives remain on the trees until fully ripened, making the harvest season much later. The better the season the longer the olives remain on the trees, and it is quite usual for all not to have fallen before May and even June. During a good season like the present the falling will become general about the month of May.

The prices brought by olives and olive oil this season are about 20 per cent higher than those of last year, a natural result of the larger supply. Olive oil is selling at from 80 to 95 francs ($15.44 to $18.34) for 220.5 pounds, or from 7¼ to 8½ cents per pound, according to quality.

SYRIA.

YIELD IN PALESTINE DOES NOT KEEP PACE WITH LOCAL DEMAND.

The following report on the decadence of the olive groves of the Jerusalem district and the present condition of the industry is furnished by Acting Consul Thomas R. Wallace:

The olive is one of the principal products of this region of Syria, and upon it the native people chiefly depend. Every village community has its olive grove, and in many places small groves are seen far from dwellings, the property of the villagers, who carefully watch and guard them during the picking season, but otherwise give them little, if any, attention.

The amount of land in cultivation in this part of Palestine is small as compared with the whole. The farmers live in villages, usually located where springs exist or water can be obtained from wells. The conditions forced upon them, both by law and custom, seem to have

discouraged individual initiative, and, instead of advance and progress, stagnation exists, and all measures of improvement are neglected. The result is a constant decrease in the production of olives, old trees that die or those cut down being replaced in very small part and those that stand to-day date back for ages; indeed, the fruit is still called the "Roman olive," and I am assured that many of the groves have well-authenticated records of existence covering a period of more than a thousand years. A few new groves have been planted by Jewish colonies in recent years and a few young trees are seen around native villages, but these form a small part compared with those destroyed.

GROWTH AND PRODUCTION.

The olive tree is indigenous and constitutes the greatest number of trees growing in the mountain district, the thin layer of soil upon the bed rock precluding other trees, although some of the largest and most productive orchards in the district are located on the plains along the sea. The climate is an ideal one for their production and the trees are prolific bearers, when well cared for, and each year produce an abundant crop.

The greater part of the year's product is used by the natives as a food in different forms, the remainder being used for illumination and manufacturing purposes. The oil production in the district, of about 3,000 tons, is used locally in making soap, which is exported to Egypt and Anatolia. There is but little, if any, oil sent out of the country at the present time. Formerly a small quantity was exported, but the decreased production and increased consumption for manufacturing purposes use up all the excess.

The native or common variety is most in favor, although a few of the large or European are used for pickling, especially when prepared for sale, but the small fruit, which is the common kind, is preferred for pickling and for oil; it is claimed they are much richer in oil, more nutritious as food, and of finer flavor. The pickling season commences about October 1, and it is the custom in the villages to do all the pickling together, as the trees are in one grove, of which each family owns a portion, and by being on the ground at the same time stealing is prevented, and as each family picks its own fruit trouble is averted. The season covers considerable time, and as the degree of ripeness fixes the use to which the fruit will be put the harvest is not hurried, as it otherwise would be. The children and the women usually do the work of picking. The women when paid wages receive about 20 cents and the children about 16 cents per day.

YIELD OF OIL.

The farmers say that a fair average of oil per ton of fruit is one-fourth, but it varies much in different qualities of soil and the care given the trees. The crop upon light-colored soils yields about one-sixth in oil, while upon deep-red soils it often reaches one-third, but the average yield is estimated at one-fourth. Some exceptionally good olive trees produce as much as 240 pounds of fruit, which yield 60 to 80 pounds of oil.

Attention has been called to a small olive grove halfway to Bethlehem, which some years ago came into the hands of a Greek, who had the berries carefully picked, the soil enriched, and proper attention given to the trees, which doubled the yield the first year.

The price received for oil varies greatly both in different years and in different places and ranges from $116 to $140 per ton delivered in a market town or village. The waste material or pumice, which is left after the olives are pressed, is used for fuel. A few new mills have been introduced recently, but the machinery in general use for the extraction of the oil is the same as was used ages ago.

SPAIN.

RESOLUTIONS OF GROWERS TO IMPROVE TRADE CONDITIONS.

Consul-General Benjamin H. Ridgely, of Barcelona, advises that at a recent national convention of Spanish olive crushers certain steps were taken which will be read with interest by olive growers all over the world. He adds:

Spain is the second largest producer of olives in the world, and the industry is handled here with great interest and care. About 3,500,000 acres of land are planted in olive trees, from which, in a good average year, about 1,400,000 tons of olives are produced and about 69,000,000 gallons of oil. Thus the united action of the olive crushers of Spain must have considerable significance. At their convention referred to they passed resolutions in which the following measures were decided upon:

First, to obtain a modification of the existing tariff, so that the duty on oil seeds shall be in proportion to that on the oils obtained from such seeds.

Second, to require all seed oils to be denaturized on import into Spain, and upon leaving the factories when crushed in this country; peanut oil of Spanish manufacture alone being excepted, but not the peanut oil imported from Madagascar.

Third, prohibition and severe punishment of any adulteration of olive oil with seed oils, whether intended for domestic consumption or for export.

Fourth, reduction and unification of railroad freight rates.

Fifth, establishment of a maximum rate of freight for olive oil and olives by shipping companies.

Sixth, export bounties to be granted on olive oil.

Seventh, schools under the management of experts for teaching the proper way to prune olive trees, to be founded in all olive-growing districts.

Eighth, the necessity for an act to be passed obliging all growers to adopt the most approved means for combating and preventing the spread of diseases of the trees and for the enforcement of such a law.

Ninth, the exemption from taxation of new plantations of olives to be prolonged to thirty years.

Tenth, olive oil to be exempt from "octroi" dues on entry into the towns.

Eleventh, that a study be made of the existing diseases of the olive tree in infested districts, with a view to finding the most efficient remedy.

Twelfth, that a careful study be made to ascertain which varieties of the olive tree give the largest yield and the finest quality and which are best adapted to the different soil and climatic conditions of the various oil-growing districts.

Thirteenth, that a national exposition of oils, wines, cereals, and other products of Spanish agriculture should be held.

Fourteenth, that "elayotecnicas" stations be established in Argentina, Mexico, Uruguay, Chile, New York, and Japan.

Fifteenth, that some means be adopted for protecting the olive groves.

Sixteenth, that uniform weights and measures be used for olives and oil throughout the country; and finally, that for the purpose of furthering the interests of all olive growers and crushers a central agency be established at Madrid.

Considerable discussion was aroused over the question of adulteration; for, while some claimed that without such adulteration exportation would be impossible, others insisted that only their absolute purity would insure the sale of Spanish olive oils in foreign markets.

CHILE.

CLIMATE ADAPTED TO OLIVE GROWING—OPENING FOR AN OIL FACTORY.

Consul Alfred A. Winslow, reporting from Valparaiso, says that the olive is cultivated in Chile very successfully, the climate being exceptionally adapted to its growth. There are at present some fine olive orchards in Chile, and the local demand is almost entirely supplied by the home production, as the importation of olives for 1905 only amounted to $6,935 United States currency. That is not the situation as to olive oil, as this is all imported, the receipts in 1906 amounting to $646,285. This suggests a fine opening for an olive-oil factory in Chile. The local olive is said to be exceptionally rich and grows to a large size.

FRUIT TRADE.

GREECE.

INCREASED SHIPMENTS OF CURRANTS—EXPORTS TO UNITED STATES.

Vice-Consul Haworth J. Woodley, of Patras, has prepared the following review of the Greek currant crop and trade:

The outstanding feature of the currant season of 1907 has been the large volume of business transacted during the latter half of August and practically throughout the entire months of September and October. That buyers were induced to respond to such an unusual extent may be attributed to the very moderate level of the opening quotations and a market showing almost daily increasing firmness owing to the reduced crop estimates during the critical period of cutting and gathering the currants.

Heavy rains in most of the producing districts not only reduced the weight of the crop, but seriously deteriorated the quality of the various growths, provincial grades in particular suffering most damage.

Fortunately most of the fruit so affected was ultimately secured in merchantable condition, but the standard of quality was necessarily lowered and has not been entirely satisfactory. The finer grades suffered somewhat less severely and Zante fruit escaped the ruin altogether, being of excellent quality and condition. Shippers have, however, done their utmost under the unfavorable circumstances and, on the whole, few complaints have been pressed to the limit of arbitration.

HEAVY FORWARD BUYING.

Owing to the small stocks carried over into the new season, a ready response was accorded to the opening quotations, which started on a level considerably lower than prices at which shipments could eventually be effected.

The late harvest and consequent limited supplies of currants available at the commencement of the season, together with the unusually heavy requirements for September and October shipments, inflated spot prices, and deliveries generally were only effected at heavy losses to local shippers, who, nevertheless in most cases, fulfilled their engagements. As the damage to the crop became more generally known, prices continued their upward course until the market reached its

highest point early in October, the quotations for provincial currants then being about $5 per hundredweight, cost and freight, New York.

From this period prices receded somewhat, though the difference was mainly due to the reduced export tax, which, by arrangement, was made payable in cash at the fixed rate of 115 drachmas per 1,000 Venetian pounds ($20 per 1,050 pounds). This was done, however, only after 66,000 tons had already been exported. Owing to the active demand and heavy shipments, this quantity was reached earlier than had originally been anticipated, while a rise in the rate of exchange also accentuated the reduction in forward quotations, so that these two factors practically accounted for the reduced quotations.

AVAILABLE SUPPLIES INSUFFICIENT.

The crop is officially estimated at 141,000 tons, as against 132,000 tons last season, leaving about 118,000 tons available for export after the full retention duty in kind is deducted. In face of the increased consumption and the fact that a large proportion of the fruit remaining in Greece is of poor quality, for which reason its export is prohibited by the Greek Government, the available supplies of merchantable fruit are generally considered to be inadequate to meet the world demand.

The increased exports this season have been general to all countries consuming currants, and the total shipments for 1907 are 766 tons in excess of those for the same period of 1906. For the season 1907-8 to December 31, the exports amounted to 113,466 tons gross, against 97,700 tons gross for the previous year.

The favorable statistical position fully warrants the continued firmness of holders, and a comparison of the stock at present available in Greece with the quantity exported during the remainder of the season of the previous year reveals a shortage of about 8,000 tons to meet the estimated universal requirements. The officially estimated crop of 1907 is 141,000 net tons, of which there were exported to December 31, 1907, 98,000, and absorbed by retention duty 23,000, thus leaving stocks remaining in Greece at 20,000 net tons.

A feature of this season has been the heavy shipments to the United States, the 15,194 gross tons going forward up to December 31 being 4,184 tons in excess of the previous season.

SPAIN.

MARKET DEPRESSION IN THE VALENCIA ORANGE INDUSTRY.

Writing from Valencia, January 24, Consul Charles S. Winans, makes the following report on the present difficulties experienced by the Spanish orange-growing industry:

Agricultural depression, especially in fruit growing, continues to increase in this district. The crisis first developed in the wine trade, in which it reached such an acute stage recently that some important wine growers, unable to obtain even the very low price of 6 cents a gallon for their product, rolled their wine casks on to the public highways that passers-by might drink gratuitously.

Now orange growers and exporters have been overtaken by disaster so crushing and complete that foreign markets on which they de-

pend almost exclusively for the consumption of the Valencia crop have all collapsed. Production has outgrown the requirements of available markets abroad, while home markets, in the interior and northwest coast of Spain, are at present inaccessible to Valencia fruit growers, owing to deficient transportation facilities and high freight rates both by sea and land. In the first two months of the present season—November and December—1,600,000 cases of oranges were exported, or about 240,000,000 pounds, and three-fourths of the crop still remains on the trees.

Farmers have been forced to sell their oranges to packers as low as 10 cents an arroba of 25 pounds, and exporters have been receiving average prices of $1.25 per case of 150 pounds of fruit, which, after deducting packing expenses, freight. and sale charges, leaves practically nothing for the oranges.

CONTRIBUTING CAUSES OF THE REVERSE.

Among the causes assigned for the threatened ruin of the Valencia orange trade, with exports valued at $12,000,000, appear to be lack of intelligent organization of growers and packers for the distribution of exports in proportion to the consuming capacity of markets, excessive production, and deterioration of quality of fruit, and dependence of farmers and merchants on foreign capital.

British fruit brokers and merchants finance the greater part of the Valencia fruit trade, advancing one-half to two-thirds the prospective value of consignments, their commission profits being increased by excessive shipments. Oranges this season colored eight days earlier than usual, the shipments in the first two weeks of November exceeding by 260,000 cases the totals exported up to the same date last season. At that early date British and German markets, still well supplied with apples, Almeria grapes, and other autumn fruits, were not prepared for such heavy imports of oranges, and have not yet recovered from the collapse at the very opening of the season.

Moreover, Valencia orange growers, in their anxiety in recent years to increase production by intensive cultivation and high fertilization have succeeded to some extent, at the expense of the quality, flavor, and keeping condition of the fruit, which has acquired a coarser skin and texture and more acidity, while Jamacia and Jaffa oranges, now competing with Valencias on British markets, have steadily gained in favor. A box of Jaffa oranges containing 144 to 152 oranges, or about one-third the number in a Valencia case, realizes at present on British markets one shilling (24 cents) more than the latter.

CHILE.

STEADILY INCREASING GRAPE INDUSTRY—RED WINE MAINLY PRODUCED.

Consul Alfred A. Winslow, of Valparaiso, reports that much attention is given the cultivation of grapes in Chile, and the manufacture of wine therefrom, as will be seen by the following statistics:

The industry is growing rapidly and promises well. The climate and soil are most excellent for the production of some of the best varieties of grapes. In 1906 there were 57,665 hectares, or 142,493 acres, under cultivation, against 51,539 hectares, or 127,354 acres, for

1904. In 1906 there were 17,260 hectares under cultivation on irrigated lands. The grapes grown on the irrigated lands were the best. The production of wine for the harvest of 1906 amounted to 157,604,656 liters (liter=1.0567 quarts), of which the greater proportion was red wine. The production for 1907 exceeded that of 1906 very materially, but the exact figures can not yet be given.

During 1906 wine to the value of $203,430 United States gold was imported, of which the United States furnished less than one-half of 1 per cent. During the same time Chile exported wine to the value of $54,740.

AUSTRALIA.

PROTECTION OF BANANAS INTENDED FOR EXPORT.

Consular Agent Asbury Caldwell, of Brisbane, reports that a regulation has been passed by the Queensland department of agriculture, providing that all bananas intended for export to Victoria shall be covered with fine cloth netting for three weeks prior to plucking the bunch. This has been found, by experiment, to be an effective protection against the Queensland fly, which when introduced works serious ravages in all orchards. This regulation harmonizes with the Victorian state regulation, which forbids importation of bananas from the Tropics, unless they have been so protected.

CEREALS IN LATIN AMERICA.

NICARAGUA.

PRIMITIVE MANNER OF FOOD PREPARATION.

In reply to inquiries from a Western company, Consul Frederick M. Ryder, of San Juan del Norte, furnishes the following information relative to the growth and consumption of cereals in Nicaragua:

Corn and rice are the only food cereals grown in this Republic, and these are not cultivated in sufficient quantity to supply the home market. All the corn and most of the rice consumed on the east coast of Nicaragua is imported from the United States. Oatmeal is used to some extent in this section by the foreign population. Grain is not grown in this locality, for the reason that neither soil nor climate are favorable. The soil is generally low and swampy, while the heavy rainfall would wash the seeds out of the ground, and the swarms of large ants would carry off the grain. Much of the corn in the interior, as well as a considerable quantity in this locality, is used as foodstuff, and for this purpose the home product is preferred, as much of it is consumed before it becomes thoroughly hardened.

PREPARATION OF THE TORTILLAS.

The favorite preparation of the corn is similar to ordinary corn fritters, and is known as "tortillas." The grain is boiled whole, with lime and wood ashes, in several waters, until the husks become separated, when it is drained and allowed to dry. When the kernels are freed from the husks, they are rubbed and thoroughly dried over a fire until slightly parched, and then are ground on the native "rubbing stone." This mode of grinding, which is not confined to

cereals, is crude and primitive, and its use demonstrates the unwillingness of the people to adopt modern methods, even while they acknowledge their simplicity and labor-saving advantages. These rubbing stones, which vary in size according to the requirements of the family, are flat stones, with concave surfaces, standing on four small legs of stone. A rolling-pin, also of stone, is used for grinding, the process being much the same as the rolling of dough for pastry. The meal is not finely ground, but resembles coarse oatmeal, and is usually rolled into the shape of a ball. When required for use, pieces are broken off, and moistened slightly, so as to be easily molded in the hands into the form of a pancake, only a little thicker. The baking is done in an earthen dish over an open fire. The people do not seem to be satisfied with any repast, however elaborate, which does not include this favorite dish.

INTRODUCTION OF AMERICAN CEREALS.

The Nicaraguans are loath to depart from long-established customs, particularly in the matter of foods and their preparation. Imported oatmeal and corn meal are used to some extent for porridge and for thickening soups, but the many varieties of American cereal or breakfast foods are practically unknown.

American manufacturers who decide to test this market should send the cereals in hermetically sealed tins or boxes of from 3 to 5 pounds each, carefully packed in light but durable cases. The only successful method of introducing these goods would be to send a reliable Spanish-speaking representative to demonstrate how partially cooked cereals containing the maximum of nutrition may be prepared with the minimum expenditure of cost, time, and labor.

After this preliminary work the representative should select the best and most reliable merchant in the locality as a distributing agent. Without this introductory demonstration, however, it is useless to name an agent, especially by correspondence. The resident agent should not be permitted to carry an extensive stock of these goods, as they soon become lumpy and musty in this climate, on account of its excessive humidity.

PARAGUAY.

FOODS ARE SIMPLE AND CHEAP—NO MARKET FOR ANIMAL FEED.

Consul Edward J. Norton writes from Asuncion that there is very little demand for cereals or breakfast foods in Paraguay, and that this is confined to the foreign element and a few of the native families. The report continues:

The majority of the Paraguayan people are poor, and their food is necessarily simple and cheap. The staple crop of the country is corn, and this is one of the principal materials used for food. The leading variety here is a white grain, which is eaten roasted on the ear, baked in a frying pan, cut up into the "puchero," or native boiled dish, or ground into meal, which is mixed with lard and cheese and baked into a sort of bread called "chipá de maiz." This bread is consumed in large quantities in all sections of the Republic. Another variety of corn in general use is a hard, yellow grain, which is usually boiled or thoroughly soaked and eaten with milk or sugar. This is also used in the production of a native drink. Paraguay ex-

ports corn at irregular intervals when there is a surplus stock on hand; but as a rule these shipments are small.

Wheat and oats are not grown in this country. Wheat is imported from the Argentine Republic and ground at Asunción. Bread of wheat flour is becoming more and more an article of daily consumption in the larger cities, but in the smaller towns and in the country districts the use of corn flour is general.

Manioc, or mandioca, is, next to corn, the staple food of the people, and is called "Paraguayan bread." It is eaten, either boiled or baked, at every meal by all classes. The starch or flour, with the addition of eggs and cheese, is made into a bread called "chipá de mandioca." Although Paraguay has lands adapted to rice growing, little attention is paid to this crop, and the bulk of the rice consumed is imported.

All of the larger groceries carry stocks of the foreign cereal foods sufficient to supply all demands. Any efforts to increase sales would probably meet with disappointment. American oats in 2-pound tins retail for 4.80 pesos, or 40 cents gold per tin; 1-pound cartons sell for about 22 cents gold. German rolled oats in 1-pound tins sell for 30 cents gold and Scotch oatmeal in 2-pound tins for 50 cents gold. [A list of dealers which handle such goods is on file in the Bureau of Manufactures.]

MEXICO.

SHORT WHEAT CROP NECESSITATES IMPORTATIONS.

Writing from Saltillo, Consul Thomas W. Voetter says that on account of the poor Mexican wheat crop harvested in 1907 about all the wheat raised has now been ground and the mills will shut down, to which he adds:

The supply of flour on hand is not sufficient to last until the new crop is harvested, and millers here are desirous that the Federal Government should reduce or take off completely the import duties on wheat, but so far as known, no concerted effort has been made to secure this action. One of the mills in Saltillo has for several months past been grinding wheat from the Argentine Republic, which was imported at the period when the Government last reduced the import duties on wheat.

MEXICAN SUGAR INDUSTRY.

GREAT PROGRESS SHOWN THROUGH INTRODUCTION OF MODERN METHODS.

Special Agent Arthur B. Butman makes the following report on the production of sugar in Mexico, and also shows the trade in this commodity and its products between the Republic and the United States:

Sugar is produced in numerous States throughout the Mexican Republic, Morelos having the largest production. The industry, which was introduced by the Spaniards soon after the Conquest, is by no means confined to the planter of wealth and vast acreage, nor is it carried on according to up-to-date methods. The native plants his small area of rented land in the most primitive manner, sometimes without plowing the ground—merely clearing and burning—and by

means of wooden rolls and copper kettles produces the various sorts of brown sugar known as panela, panocha, and piloncillo.

Great progress has been shown in the industry in recent years. The amount of foreign capital invested is constantly increasing, advanced methods of planting and harvesting are being introduced, and modern mills and refineries erected, while the old plantations are also being improved, and new machinery substituted for that formerly used.

For the purpose of protecting and advancing this important industry a presidential decree went into effect as a law at midnight February 15, 1908, raising the duty on common sugar, candy sugar, and refined sugar of all kinds, to 5 cents for each kilo (2.2 pounds), gross weight. The duty formerly prevailing was 2½ cents a kilo.

UP-TO-DATE MILLS—CULTIVATION OF SUGAR CANE.

The most important sugar mill in Morelos is at Teuxtepango, which handles the cane for the surrounding country, as well as that grown on the owner's hacienda, or plantation. About 3,750 tons are estimated as likely to be turned out during the present season.

On February 1, the plant of The Mexican National Sugar Refining Company was put into operation at El Portero, in the State of Vera Cruz, which will have a daily capacity of 125,000 pounds of sugar. The company, which is composed of American capitalists, has constructed a modern plant, equipped with the most up-to-date sugar-making machinery, from the United States. The American standard qualities of sugar will be turned out, from the pure white crystals to the brown sugar known in the United States as "third." Granulated sugar of the finest white quality will also be produced. The cane mill connected with the plant will have a capacity of 800 tons of cane a day, which will be supplied from adjacent plantations and from the 2,000-acre hacienda owned by the company, surrounding the central. A distillery will be operated in connection with the plant, having a capacity of 3,000 gallons of alcohol a day.

A great deal of land in Mexico is suited to cane growing, and it is doubtless due to the primitive methods of cultivation and manufacture employed, as well as the former difficulties in the way of transportation, that the Republic has not entered more largely into the sugar export trade. Great fertility of soil abounds in the Gulf States, and the rainfall is ample, being estimated as about 100 inches annually. In the inland State of Morelos, however, where the largest quantity of sugar is produced, irrigation is necessary, as is also true of cane lands on the Pacific coast. Lands on the elevated levels will yield less than the lowlands. I am told that from 25 to 45 tons of cane an acre is an average yield on the elevated plantations and from 40 to 60 tons in the tropical lands. Replanting is necessary more often in the highlands than in the lowlands, where every seven or eight years is sufficient. The cane grows to a large size, especially in the Gulf States region, and crushed at full maturity yields a density of from 9° to 11½° baumé.

REPUBLIC'S PRODUCTION OF SUGAR.

For the fiscal year 1900, the production of sugar in Mexico was estimated at 75,000 tons, while the production for 1906 reached 107,500 tons. The production for the present season will probably yield, according to the present estimates, about the same quantity. A lack

of rainfall in some sections prevented what had been previously estimated as a record cane crop.

The following table shows the production, by States, of sugar and molasses, in metric tons, of 2,204.6 pounds, for the fiscal year 1906:

State.	Molasses.	Sugar.	State.	Molasses.	Sugar.
	Metric tons.	*Metric ons.*		*Metric tons.*	*Metric tons.*
Campeche	654	542	Puebla	6,037	6,549
Chiapas	622	372	San Luis Potosi	3,594	1,925
Colima	1,330	1,740	Sinaloa	3,860	8,640
Guerrero	2,652	2,096	Tabasco	1,065	1,967
Jalisco	6,448	6,196	Tamaulipas	1,529	1,694
Mexico (Federal District)	747	158	Tepic	2,000	2,500
Michoacan	13,675	6,650	Vera Cruz	9,312	16,297
Morelos	21,257	35,662	Yucatan	2,130	1,241
Nuevo Leon	350	914			
Oaxaca	2,134	1,417	Total	79,396	96,469

EXPORTS AND IMPORTS OF SUGAR AND PRODUCTS.

The exports of sugar from Mexico have been for the past four fiscal years as follows:

Year.	Sugar.	Coarse sugar.	Year.	Sugar.	Coarse sugar.
	Metric tons.	*Metric tons.*		*Metric tons.*	*Metric tons.*
1903	8,003	255	1905	38,701	569
1904	16,313	177	1906	5,072	122

The falling off in exports for 1906, which represented in value about $2,500,000 United States currency, was due to the sugar crisis affecting the American and European markets. The effects of this abnormal decline were modified in a degree to the Mexican planter by the increased domestic demand sufficient to maintain lucrative prices for his product.

The amount and value of Mexico's sugar export trade with the United States for the fiscal years 1902–1907 is shown as follows:

Year.	Pounds.	Value.	Year.	Pounds.	Value.
Not above No. 16 Dutch standard in color:			Above No. 16 Dutch standard in color:		
1902	336,915	$9,340	1902	1,453	$68
1903	2,195,892	93,572	1903	218,481	9,867
1904	867,547	17,346	1904	382,705	18,652
1905	19,376,601	646,573	1905	4,672,888	286,711
1906	2,196,269	50,411	1906	1,344,715	71,515
1907	6,340,156	194,893	1907	13,272	536

During the same period the United States exported to Mexico sugar, molasses, and confectionery to the following values:

Articles.	1902.	1903.	1904.	1905.	1906.	1907.
Sugar	$63,970	$25,722	$26,150	$28,538	$228,759	$236,062
Molasses and sirup	521	933	960	1,258	1,999	4,944
Confectionery	15,731	17,883	19,086	22,420	21,343	20,927
Total	80,222	44,538	46,196	52,216	252,101	261,933

[From preliminary data compiled by the Bureau of Statistics from the monthly returns, the total imports into Mexico of sugar and products during the fiscal year ended June 30, 1907, were shown to be as follows: Sugar, raw and refined, $219,854; molasses, sirup, and preparations of sugar used in making wines and liquors, $14,728;

confectionery and chocolate, $74,095; total, $308,675. These figures, while derived from slightly different classifications of the articles, indicate that the bulk of the trade is held by the United States.—B. M.]

GERMAN POTATO PRODUCTS.

FLAKES FOR CATTLE FOOD.

ECONOMICAL UTILIZATION OF SURPLUS CROP OF EMPIRE.

Consul John E. Kehl, in the following report from Stettin, gives an account of the German success in making potato flakes for stock-feeding from the superabundant tuber yields.

Germany's annual potato crop for the past seven years has averaged 43,000,000 tons. The supply was, and still is, considerably in excess of both household and industrial demand. New channels had to be found to profitably use up the surplus and, if possible, to save a portion of the 10 per cent of the total crop which annually goes to waste through lack of proper winter storage and decay. During 1901 the German Association of Alcohol Manufacturers, the largest industrial consumers of potatoes, took this task upon themselves and organized a branch to their association to be known as the Verein Deutscher Kartoffel-Trockner (German Potato Dryers' Association), to be devoted to the question of using dried potatoes in various forms for stock feed.

To increase general interest in this question, the alcohol association succeeded in raising from interested sources, including two subscriptions from the Government, the sum of 30,000 marks ($7,140) to be distributed as prizes for the best methods of reducing potatoes to a durable stock feed. The conditions were that the total cost of drying 100 pounds of potatoes should not exceed 5 cents, including fuel, labor, interest, and depreciation; the last two items on a basis of 100 working days per year, and that large plants should have a minimum capacity of 10 tons of raw potatoes in 12 hours; small plants 2½ tons in the same time.

RESULT OF CONTEST—LEADING SYSTEMS.

Some 40 entries were made, of which 22 failed to answer the requirements. It was noted that the systems using fuel gas for drying purposes were operated at less expense that those using steam. The present cost of producing 100 pounds of potato flake is from 5 to 10 cents with gas, and from 12 to 20 cents with steam. These figures could not be applied to American conditions on account of wages, which would be from 200 to 300 per cent more than are paid here.

The so-called "Paucksch" system for producing potato flakes is, in brief, as follows: The potatoes are washed, then thoroughly steamed, after which they are passed between two rollers heated to 140° Cel. = 284° F.; the thoroughly dried crushed substance in the shape of small flakes is then removed from the rollers by stationary knife blades and passed through a cooling funnel, after which it is ready for use or storing.

The "Heiler" system for making potato flour consists of washing the potatoes, then after crushing them into a cold pulp, the matter

is passed into a gas or steam-heated drum for drying purposes; when thoroughly dry it is spread for cooling and then ground into flour.

There are many other systems, but the brief descriptions given will suffice to show the fundamental principles for manufacturing potato flake and potato flour.

VALUE AS STOCK FOOD.

It is now believed that the surplus supply of potatoes can be worked up into a nourishing and profitable animal food product, with an unlimited disposing field and, according to optimistic opinions, will make the German farmer independent of foreign feeds, particularly American corn.

The present demand for potato flake will exhaust the entire supply by April. Within the next two years an attempt will be made to export this article to the United States. At present there are about 130 potato-drying plants in operation throughout Germany. Potato flake sells at $3 to $3.50 per 100 pounds; potato flour and other forms of dried potatoes at $1.50 to $2.50 per 100 pounds. It is estimated that 3½ hundredweight of raw potatoes are required for 1 hundredweight of flake, that the steam-dried flake is softer and whiter than the gas-dried article.

Potato flake is said to contain 80 per cent carbonic hydride with 62 per cent amylum, and is readily eaten and easily digested by all animals, including ruminants. Two pounds of potato flake mixed with 5 quarts of milk and 1 pound of linseed cake is said to make an excellent feed for calves; for draft horses, 8 pounds of flake and 4 pounds of oats mixed in addition to hay; for fattening hogs, 3½ pounds of flake and 4 pounds of ground barley mixed with water or sour milk is used; milch cows are given 2 pounds of flake and 2 pounds of bran mixed in addition to other feeds.

A sample of potato flake made by the Paucksch system is forwarded herewith [on exhibition at the Bureau of Manufactures].

ALCOHOL MANUFACTURE.

EXCELLENT YIELD OF TUBERS—PRODUCTION OF SPIRITS.

Consul-General Richard Guenther, of Frankfort, states that, according to statistical findings, the potato crop of Germany in 1907 amounted to 45,538,299 metric tons (metric ton=2,204.6 pounds), of which a large percentage was converted into alcohol. Further particulars follow:

Last year's crop was one of the largest and best since 1899, only 6.4 per cent of it having been diseased. The alcohol production in Germany is controlled by a trust which fixes production and price. The trust limited the output of alcohol in 1907 to 82 per cent of the total capacity of the stills, resulting in the production of 3,836,614 hectoliters (hectoliter=26.4 gallons), against 4,378,464 hectoliters manufactured in the preceding year.

Of the 1907 production 105,000,000 liters (liter=0.264 gallon) were completely denatured, an increase of 11,000,000 liters over the year before. For drinking purposes 2,439,720 hectoliters were used, an increase of about 174,000 over 1906; 215,619 hectoliters of alcohol

were exported, of which Russia and Italy received considerable quantities.

The price for alcohol was high, having been considerably advanced at different times. German alcohol is principally made from potatoes. As a beverage it is sold very cheap. At the popular dramshops a drink (small wine glass) can be had for 6 pfennigs (1½ cents).

Among statesmen and economists in Germany there are many who advocate the monopolization of the production and sale of alcohol by the Federal Government of the Empire, on the plea that the large profits from this industrial branch would revert to the state and could also benefit the community by making low prices when the article is used for industrial purposes and by putting a high price on drinkable alcohol so as to check drunkenness and diminish crime, disease, and distress, of which alcohol is so largely the cause.

TEA INDUSTRY.

BRITISH INDIA.

DECREASED CROP AND DECREASED EXPORTS LAST YEAR.

Consul-General William H. Michael advises that the Calcutta tea market opened January 7, after the holidays, and 28,500 packages were offered for sale. He gives further particulars as follows:

On the whole, the quality must be considered rather disappointing. The majority of teas barely maintain the average standard. There is no doubt that even in the Dooars, which on the whole has done well, there has been less of the good autumn teas made in 1907 than in the previous year. A few Darjeelings are included in the present sale, but the hill district teas are practically finished. Assam teas are a fair lot, but show nothing very distinguished in style or cup.

Indian exports now show plainly the effects of a reduced tea crop. The total export figures for 12 month periods ending January 9, 1908, were as follows:

Whither exported.	Up to January 9—		Whither exported.	Up to January 9—	
	1907.	1908.		1907.	1908.
	Pounds.	*Pounds.*		*Pounds.*	*Pounds.*
United Kingdom	150,750,000	147,250,000	Bombay	4,000,000	4,858,000
United States	12,461,000	3,875,000	Other places	5,440,000	3,485,000
Russia	17,000,000	25,500,000			
Australasia	8,849,000	10,282,000	Total	198,500,000	195,250,000

The variance in the statistics of tea exports to the United States arises through the fact that so much destined for America is transshipped via Great Britain or China. Tea experts place the amount really going to the United States in 1906 as 10,784,00 pounds, and 9,684,00 pounds in 1907.

Ceylon made a considerable spurt in its tea exports during the closing months of 1907. The total exports from the island for that year amounted to about 112,000,000 pounds, against 107,000,000 pounds in 1906, an increase of 5,000,000 pounds. This was a very heavy increase, yet it was not sufficient to counterbalance India's deficit, combined with increased demand. A noteworthy feature of the trade of Ceylon

in 1907 was that its exports to Russia, although greater than in 1906, fell far behind the Indian tea exports to that Empire.

BRIGHT PROSPECTS FOR INDIAN AND CEYLON TEA.

According to a local review of the Indian and Ceylon tea markets for 1907 the prospect is most encouraging. It says that the average price of tea was the highest during the year since 1899. This statement, however, does not necessarily imply good results to all producers, because one of the chief features of the past twelve months was the high price ruling for common grades. Taking the industry as a whole, there seems every probability that the depression which has ruled for many years has at length passed away, for production has shown little increase in the year just ending, while consumption, both at home and abroad, has materially increased, and very little additional land is being placed under tea cultivation.

One of the most remarkable features of the last two years has been the great expansion in the use of Indian and Ceylon teas abroad. This rose from 129,884,250 pounds in 1905 to 162,461,824 pounds in 1906 and about 171,500,000 pounds in 1907. When it is remembered that in 1890 the total consumption of Indian and Ceylon tea abroad was only 14,001,132 pounds, the progress made is really startling. There is no doubt that the expansion in these markets has saved the industry from very serious losses, and largely contributed to the more satisfactory position at the present time.

RUSSIA.

IMPORTS, CONSUMPTION, AND CULTIVATION IN THE EMPIRE.

Consul William W. Masterson, of Batum, in transmitting the following information, reports that the Russians are said to be the greatest consumers of tea of any people in Europe:

About one-half the tea imported into this district is received by sea at the ports of Batum and Novorossisk, and is entered through the custom-houses of Tiflis, Baku, Askhabad, Bokhara, Samarkand, Kokand, etc., but a great portion of the tea reported from the custom-houses at Askhabad, Bokhara, and Samarkand is imported direct from China by caravan and by the Siberian Railroad, and it is impossible to tell just how much comes by sea and how much overland.

Of the 37,759 tons of tea imported into the district during the past seven years, over 32,000 tons were green tea, the most of which is reported in the three Central Asian custom-houses of Askhabad, Bokhara, and Samarkand. The brick tea received at Novorossisk and Batum (2,226 tons and 6,403 tons, respectively, during the past seven years) is of poor and cheap quality, and is imported in this form.

The tea that comes into this district by sea is brought by the steamers of the Russian Volunteer Fleet, a line that runs from Vladivostock to Odessa, via the Suez Canal, and the item of tea is at present the most valuable part of the cargoes of the ships coming west. It is estimated that about 75 per cent of the tea imported into this district comes direct from China, and practically the remainder from India.

CONSUMPTION AND CULTIVATION.

The consumption of tea is not confined to any particular class, but from the prince to the peasant all the people are tea drinkers, and the

use of coffee and cocoa is not in any manner so universal, being, in fact, almost unknown outside the cities and larger towns.

Owing to the almost semitropical climate that prevails in this part of the Black Sea region, frequent attempts have been made to cultivate tea in paying quantities, and the Russian Government at its experimental station located here, under the title of the Imperial Domains Estate, has for several years past cultivated tea in considerable quantities, the growth and the preparation of the tea being under the supervision of Chinese brought here for that purpose.

A large firm of Moscow merchants also have a tea plantation located here, that for several years did a considerable business in raising and selling tea, but during the past year, owing to financial difficulties and the unsettled condition of the country, this plantation has not been worked to any extent. In addition to these two estates a number of owners of lands along the Black Sea coast, immediately to the east of Batum, are raising tea in small quantities, which is sold in the local market at a reasonable figure, and the prediction is frequently expressed that when conditions permit and the small landowners become educated in the proper method of its raising and curing, a considerable portion of the tea consumed locally will be of home production.

A trial shipment of 40 chests, containing some 2,000 pounds of Batum tea, was sent to the United States some little time ago, but no further shipments have been made.

DANISH MARKETING METHODS.

FARMERS' EGG EXPORT COMPANY—FRUIT MEN PROMOTE HORTICULTURE.

The principal reason why the export of agricultural and other farm and garden products from Denmark has reached the present dimensions, states a Canadian trade commissioner, lies in the forming of cooperative export associations, whereby quality and packing, etc., become uniform and reliable. The commissioner also says in his report to Ottawa:

Besides the dairy and creamery associations there also exist such cooperative associations for egg and fruit producers. The Danish Farmers' Cooperative Egg Export Association, founded in 1895, now counts about 40,000 members and has its own paper. The object of the association is to work up the best possible market in foreign countries for Danish eggs, by guaranteeing the buyers that the eggs sold under the mark of the association are strictly fresh and clean. It has packeries in the principal cities. Every week the association sends out a list of prices, which then is in force from Thursday morning to the next Wednesday evening. The sales of the association amount to about $1,125,000 per year. [Great Britain alone imported from Denmark in 1907 3,800,366 great hundreds valued at $8,634,720. This was an average of 22.7 cents per dozen, against an average rate of 21.1 cents the year previous, and 20.6 cents in 1905.—B. of M.]

The Danish Fruit Producers' Association, founded in 1888, has now about 7,000 members, and like the egg exporters, also have their own paper. The association's work consists in arranging expositions

and discourses and also by sending out traveling teachers throughout the country. Further, it assists the members in obtaining the most suitable young trees and plants, as well as in the most profitable sale of their products. The sales of the association now amount to about 1,500,000 pounds of fruit per year.

TURKISH BARLEY SHORTAGE.

EXPORT PROHIBITED AT SMYRNA—OPPORTUNITY FOR SALES.

Consul Ernest L. Harris, writing under date of January 8, advises that the embargo recently placed by the Turkish Government upon the export of barley from the port of Smyrna is still in force, to which he adds:

One of the largest shipping firms in this city, as well as some minor ones, are having considerable trouble in attempting to carry out orders placed for their customers before this prohibition went into effect. A period of six weeks was given them to meet their engagements, but they state that this limit has not been sufficient. There is a great shortage this season all over the country, and there is as great an opportunity for the sale of barley in these parts as there is for wheat.

It must be understood, however, by American dealers in cereals that the present great demand for foreign grain in Asia Minor is but a temporary one. Asia Minor is naturally a grain-producing country, and it is only when it is visited by a famine, as at present, that the prices of all foodstuffs rise rapidly, and an artificial demand is thereby created for foreign products. In view of this, it may be safely predicted, in the natural order of things at least, that the present market for foreign cereals will last about another six months.

Barley is one of the most important cereals in Asia Minor. This is not only true to-day, but it has been so as far back as the history of this country may be traced. In districts where rice is not to be obtained it is even used as a substitute for the natural Turkish dish of "pilaf." The neighborhood of Amasia and the plains of Sivas are celebrated regions for the production of barley. More than 50,000 tons annually are exported from the port of Samsun.

FRENCH SEA FOODS.

MARENNES OYSTERS—APPEARANCE OF AMERICAN FISH.

Consul George H. Jackson, of La Rochelle, sends the following information concerning oysters and fish on the French coast:

The Marennes oyster is considered the most popular in France. The oyster parks are laid out in the space between the island of Oleron, the island of Aix, and the mainland. Each ebb tide permits the waters of the Seudre to flow over the beds. The bivalves are brought to this locality in large numbers from the breeding beds at Archeson. Here they are deposited in the mud to fatten and to take on the peculiar coppery tint and taste, which makes the green oyster of Marennes popular in France. According to the statistics of 1907, shipments of oysters from one of the two railway stations gave a total of 8,220 tons,

which necessitated the use of 620 freight cars. The increase over 1906 was over 150 tons.

A number of fishes hitherto unknown in these waters, but well known on the Atlantic coast of the United States, have recently appeared, among the most numerous being the sheepshead and the bluefish. The appearance of this new sea food has caused considerable interest in the fishing industry. Up to the present time, however, I have only seen fish that are large and strong. The presence of shad is also greatly appreciated, but is due directly to the fish culture in the streams emptying into the Bay of Biscay. Shad bred in these waters apparently differ slightly in form and color from the American variety.

ENGLISH HOP YIELD.

DISAPPOINTING CROP RESULTS IN THE COUNTY OF KENT.

Consular Agent F. W. Prescott, of Dover, reports that, although the yield of hops last year in the English county of Kent was somewhat better than in 1906, many gardens proved an entire failure, and were not picked. The consular agent adds:

The prices were also disappointing, and following upon the recent convention of hop growers held at the agricultural college at Wye, an important debate took place recently at the Associated Chamber of Agriculture, when the delegates from Kent and Sussex advocated an import duty of 40 shillings per hundredweight ($9.73 per 112 pounds) on all foreign hops.

In support of this proposal it was pointed out that in 1878 there were 71,000 acres under hop cultivation in this country, which has been reduced to 44,938, and during the past year 202,304 hundredweight of hops were imported, of which America sent 126,122 hundredweight. The resolution for an import duty was supported by other hop-growing districts, but did not find favor with the majority of those present at the meeting and in the end it was withdrawn.

CHILEAN MEAT SUPPLY.

BEEF STOCK SCARCE—DUTY REMOVED ON ARGENTINE ANIMALS.

Consul Alfred A. Winslow, of Valparaiso, reports that the conditions in Chile have been such that the cattlemen of that country have not been able to furnish beef cattle sufficient to supply the demand. He adds:

In consequence the price of meat has been exorbitant for this part of the world. In Valparaiso the best cuts have been selling for 18 to 20 cents United States currency per pound, and hard to get at that. This was the result of two very dry seasons, when cattle died by the tens of thousands for want of food. Pastures in many cases failed entirely, and as no reserve provision, in general, is made to feed stock, the cattle were left to die. The most of those that survived will be of little value for some time to come.

To meet this emergency the Government of Chile has suspended the duty on cattle from the Argentine Republic for a period of two years from December 16, 1907.

TRANSPORTATION.

WORLD'S RAILWAY SYSTEMS.

BOLIVIA.

MORE MATERIAL WANTED—THE MONEY PROVIDED—PROJECTED ROADS.

Special Agent Charles M. Pepper, in a recent report from La Paz on the railroad situation in Bolivia, says that the money has been provided to carry on the work already undertaken, and that a market for considerable railway material may be found in that country, where Americans engaged in the railway business are held in high regard. Mr. Pepper writes:

Purchases of railway material for Bolivia have not ceased, nor are they likely to cease. The conditions which obtain in other parts of the world are, of course, reflected in this section of South America, and since Bolivia's chief products for export are tin, silver, and copper the fall in the price of those minerals affects both general business and the revenues of the Government. But, fortunately for the country, the funds for railway construction are not dependent on current resources. The Bolivian Government is now reaping the benefit of its action in dealing with responsible financial interests in the United States, and American manufacturers of rails and material should have the advantage of a continuing market.

The $12,000,000 of the Government, to which the Speyer-National City Bank syndicate contracted to add $15,000,000, making a total fund of $27,000,000, will all be spent in building railroad lines, as originally agreed upon. The present situation, concerning which misleading reports have been published, is due to the certainty that $27,000,000 will not build as many miles of railway as was anticipated, and various plans are under discussion for relocating some of the proposed lines and satisfying the aspirations of various districts for railway communication.

FAIR PROGRESS IN RAILWAY WORK.

The actual condition to-day is that work is progressing with reasonable rapidity on the line between Viacha and Oruro. Viacha is on the existing railway, 20 miles from La Paz and 35 miles from Gaugui, on Lake Titicaca. The line from Viacha to Oruro is 125 miles in length. About half the distance is completed and open to traffic. The rails and other material for the remaining section are either on the ground or at Mollendo awaiting transportation, and there is no reason to doubt that the expectation of the contractors that the railroad will be completed to Oruro and opened for traffic in June will be realized.

The total cost of this Oruro-Viacha section, including rolling stock, shop equipments, terminal facilities, engineering, and office expenses,

will be approximately $4,000,000, or $32,000 per mile. It is not to be assumed, however, that the proposed network of Bolivian railways can be built and equipped at an average of $32,000 per mile. The central plain across which the Oruro-Viacha line runs is far from presenting a billiard-table surface. It is very broken, has some heavy grades, and requires a good deal of bridging and "viaducting" for protection against the rainy season. But it is of easy construction compared with the sections which are to be built in order to provide transportation facilities for the Potosi and other mineral districts, and its average cost per mile does not afford a safe basis of computation.

A VERY PROFITABLE LINE.

Part of the material for the Potosi section has been landed at Mollendo and will be delivered in the interior in time for the construction to begin in June. One of the unsettled questions, however, relates to this line. If laid in conformity with the original plans, part of it will parallel the Antofagasta-Oruro Railway between Myuni and Oruro, the distance between these two points being 195 miles. The Antofagasta line, whose total extension from the coast to its terminal point at Oruro is 575 miles, is, in proportion to its length, the most profitable railroad on the west coast of South America. It is operated by an English company, though some shares are held in Chile. The Bolivian Government guaranteed 5 per cent on $3,750,000, which was the capital estimated to have been employed in building the Bolivian section of 300 miles, but the traffic has been so profitable that the payment of the guaranty never has been necessary. Notwithstanding the profits, the company has done little for the development of Bolivia since it failed to exercise the rights claimed for building extensions and to provide sufficient transportation facilities for the territory which it should have served.

A DIFFICULT QUESTION.

The pending question is whether the Bolivian Railway Company, which is the American syndicate, and the Antofagasta company will come to some kind of a traffic arrangement for the operation of the Oruro-Myuni section of the Antofagasta line or whether the parallel road shall be built. One hindrance to an agreement is the gage of the Antofagasta road, which is 2½ feet, while that of the Bolivian railway is 3 feet 3⅜ inches, or 1 meter. The American capitalists would have preferred the standard gage of 4 feet 8½ inches, but the preference of the Bolivian Government and the lower initial cost caused the meter gage to be adopted. There is no probability, however, that the Americans will consent to take a step so far backward in railway construction as to incorporate a 2½-foot gage into any part of their system. The Antofagasta company, on its part, has a positive objection to the transshipment at Myuni, which will be necessary if the gage be changed. The shipments from the Huanchocho mines, near Myuni, which are in Bolivian territory, and from the Chilean nitrate fields, which lie convenient to the coast, would be continued over the very narrow gage section, but the products of the Oruro mining district, which might be shipped out by the Antofagasta line, and the general merchandise imported would have to be transshipped at Myuni.

THE GOVERNMENT MAY HAVE TO TAKE POSSESSION OF A ROAD.

It would be to the advantage of the Antofagasta company if the Viacha-Oruro line were not built at all, since this will divert some traffic by way of Lake Titicaca and Mollendo and later by the more direct route of Arica, but since the London company has not been able to prevent the construction of this railway, and will not be able to hinder more than temporarily the construction of further lines, the practical question is how best to adopt itself to the circumstances. In case the Bolivian Railway Company and the Antofagasta company fail to come to an agreement an extreme measure suggested is that the Bolivian Government expropriate the Myuni-Oruro section of the Antofagasta line.

London directors of South American corporations have not heretofore shown much disposition to accommodate themselves to new developments, particularly where their properties are earning satisfactory dividends without outlay for betterments or changes in the gage and new equipment. This may account for the doubts felt in Bolivia about an agreement being reached which will insure harmonious instead of competing and combative railway construction.

THE MARKET FOR MATERIAL NOT AFFECTED.

It is worth knowing that these complications will not affect the market for material. If a friendly understanding is reached by the Bolivian Railway and the Antofagasta line, it will enable a geographical modification of the routes agreed on in the contract between the Bolivian Government and the Speyer-City Bank syndicate to be made without decreasing the amount that ultimately will be paid out for material. Should a joint agreement be made, the gage of the Oruro-Myuni section will be widened from 2½ feet to 3 feet 3⅜ inches, which will practically mean the reconstruction of the line, and new rolling stock will be required. If this is not done at once, and the American syndicate in constructing the Potosi line parallels the Oruro-Myuni section of the Antofagasta line, the latter, to protect itself, in the end will have to adopt the meter gage. There are, in fact, railway men who insist that in spite of the profitable traffic which the Antofagasta company handles over a 2½-foot gage the whole line will be reconstructed on a meter gage. This would mean heavy purchases of new rails and rolling stock. But there are no indications from London that this possibility is recognized.

A NEW CHILEAN LINE.

In addition to the material which will be needed for the railroads of the American syndicate, there is now something more than a prospect that the so-called Chilean line from Arica to La Paz will be built. Complete and final engineering surveys have not been made to the extent of fixing a definite location from the Bolivian border, but the tentative surveys indicate alternative routes varying from 300 to 320 miles across the volcanic range of the Cordilleras. Whatever route is adopted, the Corocoro copper fields will be tapped and the Arica line will be the shortest one between the interior of Bolivia and the Pacific coast, though it will not traverse a region in which much local traffic can be developed.

Provision was made for the construction of the Arica-La Paz line by Chile under a treaty entered into by Chile and Bolivia in

October, 1904, and subsequently modified in some particulars. It is not necessary to repeat the details of the treaty or the reasons assigned for it. The intention was to provide Bolivia an important railway outlet within a short period and to create a market for railway material. A Chilean syndicate was given the concession for constructing the line, but proved unable to do so.

CHILE'S DELAY LEADS TO REMONSTRANCE FROM BOLIVIA.

The Bolivian Government was reported to have made energetic diplomatic remonstrances to Chile over the delay in beginning the construction of the Bolivian section. In November, 1907, under an agreement with the Chilean Government, the contract was taken over by the Deutsches Bank of Berlin, whose South American representative is the Banco Aleman Transatlantico. Partial funds are said to be in hand for the work, which is to be completed within four years. It is now reported that the Deutscher Bank has let the contract to a leading German construction company, which is building railroads in Venezuela and other foreign countries. It is assumed that the rails for the Arica line will be furnished by the German steel syndicate, but it does not follow that all the rolling stock and other equipment will come from Europe. The Banco Aleman Transatlantico is the Bolivian banking agent of the American syndicate, and its principal in Berlin is understood to have an interest in the syndicate's Bolivian enterprise. The assumption is that there will be reciprocity and that the American syndicate will become interested in the Deutsches Bank's enterprise. If this is done, there should be opportunity for the sale of railway material by manufacturers in the United States. The Americans who are now engaged in railway construction in Bolivia are not impressed with some of the reported engineering features of the proposed Arica line. One of these, which they regard as a serious mistake, is the adoption of a 6 per cent grade and the use of the rack and pinion system to surmount it. This plan, however, may be changed by the German engineers.

OTHER RAILWAY PROJECTS.

In addition to the actual construction of lines by the American syndicate and the prospective construction of the Arica line by the German banking interests, acting for the Chilean Government, there is the almost certain construction of a 55-mile extension in southern Bolivia by the Argentine Government. This will be from Quiaca, on the border, to Tupiza. The Argentine lines have now reached the boundary, and their prolongation to Tupiza has been provided for in several treaties and protocols signed by the two Governments. The Argentine Congress so far has failed to make the necessary appropriation for the Tupiza extension, but national interests will probably cause this policy to be reversed and the funds to be provided. Most of the material for the prolongation of the Argentine railways to Bolivia has been bought by the Argentine department of public works in Europe. The Tupiza section will require considerable bridge work, and American manufacturers will have time, through inquiries at Buenos Aires, to inform themselves of the conditions under which it may be supplied. The material used in the prolongation of the Argentine lines to Bolivia has been shipped by

one of the Atlantic steamer lines direct to Rosario and there transferred to the railway, and this will be the route for shipments for the Tupiza extension.

BENEFITS OF AMERICAN RAILWAY MATERIALS.

One result of the building of the Bolivian railway system by Americans is already seen, but the full effect will not be apparent for some time. This is in the solid construction of the lines and in the high class of material and of rolling stock employed. Heretofore American manufacturers have supplied locomotives and other rolling stock because of their ability to adapt themselves to the somewhat peculiar requirements of the railroads, few of which have been constructed according to the ideas which obtain in the United States. The construction usually has been of a cheap character, with roadbed, bridges, and equipment suited only to limited traffic. When the traffic grew there was no means of meeting it. Locomotives were able to haul only light trains; bridges were able to sustain only light locomotives. The American capitalists can charge themselves with some costly mistakes in the first stages of their Bolivian railway experience, but lack of substantial and adequate construction is not one of them.

The Viacha-Oruro line will serve as the model for the whole system. The roadbed is of the most solid kind, 60-pound rails are used, the bridge work is very substantial, powerful locomotives are already at hand, and both the freight and the passenger cars which are being unloaded are of ample size and strength. I mention these particulars because they show the class of railway material that hereafter will be most in demand in the Andes. European and native companies may not at first be willing to acknowledge that a radical change has taken place and may for a time longer cling to the small Belgian engine and the bobtail freight car, yet finally they will follow the American example.

LACK OF TRANSPORTATION FACILITIES A HINDRANCE.

In concluding this outline of the status of Bolivian railway construction, and in answering some queries regarding the prospective market for material, a word is necessary concerning the limitations to more rapid building since the funds are available. These limitations are the lack of transportation facilities for bringing in the material and the scarcity of labor. Had it not been for these drawbacks the American syndicate would have had the Viacha-Oruro line completed in 1907 and the Potosi branch well advanced by this time. Some improvement in transportation from Mollendo has been effected, but the getting of material into the interior of Bolivia must continue largely dependent on this single route, since the Antofagasta company is without the facilities to handle large quantities, even if the disposition existed.

The German syndicate in building the Arica line will be able to unload its rails and other material at Arica, which has a much better harbor than Mollendo, and thus utilize its own construction mile by mile; but in obtaining labor it is not likely to be better off than has been the Bolivian Railway Company. The Cholos, or half-breed Indian population of Bolivia, have shown little adaptability to railway labor, even with the inducement of good wages. Those who are

not mine workers or employed in pack-animal transportation have small farms of their own. While the cultivation of these farms yields scanty returns, the natives have shown little willingness to abandon it even temporarily for the better-paying railroad work.

FOREIGN LABOR WANTED—THE OUTLOOK.

Various plans have been considered for obtaining sufficient labor. One suggestion is for Italians. These have been employed satisfactorily in building the northern Argentina extensions, though not in large numbers. Another plan contemplates Japanese immigration. While final measures have not been adopted, the indications are that a few thousand laborers will be secured outside of Bolivia.

Whenever the general situation, both as to the relocation of some of the proposed lines and the attitude of the Bolivian and the Antofagasta railway companies toward each other, is cleared up, and the system that is to be constructed is determined, the information will be conveyed by Minister Sorsby, who has heretofore reported so fully on the subject. In the pending situation no definite statement is possible. But for the reasons I have stated in the opening paragraphs of this report the existing complications are not likely to stop the actual railway construction or to lessen the quantity of material that must be bought, though advantage may be taken of dull times to secure concessions in prices. Manufacturers in the United States already know that all the purchases of material for the Bolivian Railway Company are made in New York City, and they are familiar with the sources of information there. They may find it advantageous, however, to follow the progress of the German syndicate's plans for the Arica line and the prospect of supplying it with bridge material and rolling stock.

PERU.

MORE RAILS AND MATERIALS NECESSARY—NEW PROJECTS CONTEMPLATED.

Special Agent Pepper, writing from Lima, sends the following information concerning the purchase of railway supplies and projected railway improvements in Peru:

Peru, notwithstanding monetary conditions, is likely to continue a fair buyer of rails and railway material during 1908, particularly if there is a reduction in the price. Orders given more than a year ago are now being filled and the material is arriving. By the time all of it is delivered the probability is that further material will be demanded, in order to complete extensions and improvements already in progress and possibly to provide for some of the new projects. The prospective purchases include rails, ties, bridge material, and rolling stock. The Peruvian railways are supplied almost entirely from the United States, particularly when locomotives and rolling stock are wanted, and the outlook has therefore a special interest for American manufacturers.

The heaviest buyer is the Peruvian Corporation, of London, which operates the state railways, under lease, and which, through an arrangement with the Government, is carrying out the prolongations and extensions of several of those lines. During 1907 the Peruvian Corporation imported 14,000 tons of steel rails, 512,000 ties, and ma-

terial for 4 bridges of from 85 to 230 feet in length. A large order for locomotives was filled in the previous year.

The Cerro de Pasco Mining Company, which completed and opened its branch line to the Gollarisquisca coal mines, in addition to the rails for that branch was a purchaser of rolling stock, its orders including 2 locomotives, 15 forty-ton steel hopper coal cars, 25 ore cars, 10 flat cars, 12 gondolas, 10 under-frame boxes, and 2 cabooses. Some of these orders have been filled and deliveries are now being made of others. The growth of traffic in the Cerro de Pasco district indicates that further additions to the rolling stock will be required.

RECONSTRUCTION OF AN ABANDONED LINE—ROAD TO BE EXTENDED.

The Peruvian Government has undertaken the reconstruction of the line in the south from the port of Ilo to Moquegua, which was partially destroyed during the war with Chile in 1881, and was then allowed to be covered over by the drifting sands. The rails were ordered for this reconstruction and part of the material has been delivered to the contractor who this month entered on the work.

Several of the short lines in the north running from the coast back to the Cordillera are being prolonged further into the interior, among them those from Pacasmayo and Salaverry. Rails and material for these prolongations are included in the purchases of the Peruvian Corporation. It is possible that these extensions will be continued and additional material be called for when the present work is finished. A short line is also likely to be built from Tumbes—though no contracts have yet been made for rails and materials for it.

When the prolongation of the Central Railway from Oroya to Huancayo is completed the extension will be continued to Ayacucho, Congress having authorized it, and by the time this work is ready to be taken up funds will be available for the purpose—though no rails or material have yet been ordered for this extension.

The bulk of the purchases by the Peruvian Corporation, aside from the rails needed for the new lines, has been for relaying the tracks on the Central or Oroya Railway, the main trunk of which from Callao to Oroya is 138 miles in length. The traffic which was developed by the Cerro de Pasco Company, in addition to the ore shipments and the freighting of mining supplies for the mines already in operation, found the Central with very inadequate facilities, and some attempt was made to enlarge them, though not on a commensurate scale. Since the system was placed in charge of the present experienced general manager, and practical railway operation was put in force, a larger volume of freight has been handled with the existing facilities and the promise is held out that the betterments which are now being made will provide for a further addition to the traffic. Assuming that this is so it does not follow that the improvements can stop with the heavy purchases of material already made.

NEW WORK NECESSARY ON THE CENTRAL RAILWAY.

Whether the Central Railway be electrified, as proposed, or not, many sections of it must be practically rebuilt and much additional rolling stock be supplied if the stockholders in the Peruvian Corporation expect to secure the return on their investment which is obtainable. The extension being made from Oroya to Huancayo under contract with the Peruvian Government will provide new

business, and the increasing traffic from the Cerro de Pasco Mining Company and the other new mining and smelting enterprises has been indicated. The betterment of the physical condition of the line and improvement in operating methods, instead of satisfying the requirements, are more likely to show the need of a complete reconstruction. The difficulty of securing funds in London, where a blanket loan has been proposed, is said to be responsible for the incomplete measures for placing the Central in a position to handle the future traffic which it can command.

One positive step already has been taken for placing the line in a condition to meet traffic requirements. This is the reconstruction of the bridges and the replacement of some of the old ones by new structures. Several of the bridges on the Central are notable among the many marvelous engineering features of this railway, stretching across deep gorges from tunnel to tunnel or from one precipice wall to another precipice wall. Their maintenance always has been a source of deep concern and the weight of the trains passing over them has been carefully calculated. Two years ago when a large number of locomotives were bought in order to provide for the growing traffic it was found that they were too heavy for the bridges to sustain them. A contract was then made with the American Bridge Company to replace the existing bridges, one provision of the contract being that the old structures should be removed and the new ones erected without interrupting the running of the trains. The material is now on the ground, the bridge company's expert workmen are also on hand, and the work is beginning.

On the Southern Railway, which runs from Mollendo to Lake Titicaca, the long bridge and trestle at Arequipa are to be dispensed with by the construction of a loop. Other betterments requiring considerable material also will be made on the Southern.

THE PROPOSED ROAD TO THE AMAZON.

If the terms of the concession granted in 1906 for a railway to the Amazon by the way of Ucayali River were literally complied with, there would be an early demand for a large quantity of steel rails, rolling stock, and other material, since construction was to begin in August, 1908, and the road was to be finished in 1913. Though the concessionaire has a forfeit of $100,000 up it is not expected that this will be exacted if the actual construction is not begun at the date specified, in view of the condition of the money market in the United States where the capital was to be raised. But in view of its importance to the development of Peru, and the provisions already made, interests financially strong enough to carry out the project are pretty certain to come forward and undertake the construction of this railway.

The concession is for a standard-gage line which, starting from a point between Oroya and Cerro de Pasco on the existing railway, shall terminate at a point on the Ucayali River, suitable for steam navigation all the year round for vessels drawing at least 5 feet. A subsidy of £2,000,000, or approximately $10,000,000, is provided in 6 per cent bonds at par value to be delivered in half-yearly installments and in proportion to the number of kilometers finished in the same half year, the payment of the last installment to be made when the

railway reaches the Ucayali. A grant of 7,500 acres of forest lands is also made for each kilometer of the railway built. A further provision is the privilege of placing steamers in all the Peruvian region of the Amazon and its tributaries and a grant of 5,000 acres of land is made for each steamer of 500 tons so placed. The subsidy bonds to be issued are guaranteed by the tobacco imposts, which, under a law passed in 1904, are set aside for railroad purposes. They now range from $900,000 to $1,000,000 annually.

FINAL SURVEYS DELAYED FOR A LINE TO THE UCAYALI.

Various projects have been proposed for reaching the affluents of the Ucayali at the small river landings of Puerto Bermudez and Puerto Victoria and the length of the railway line necessary to reach them has been estimated at 225 to 250 miles. The route indicated in the latest concession is known as the Perené, and is said to offer a somewhat better line to the Ucayali. Numerous reconnoissances and horseback surveys of the various routes have been made, but there has been no engineering location yet attempted. The concession requires that the final surveys shall be completed and submitted to the Government by the end of 1908, but this, like other provisions, may be extended.

The purpose of the Peruvian Government in providing for the construction of the line to the Ucayali is both political and commercial. It is desirous of securing prompt and regular communication with its Amazon port of Iquitos and of bringing the rubber product of all that Peruvian region out through Peruvian territory to the Pacific instead of having it go through Brazilian territory to the Atlantic, as is now done. There are, however, commercial advantages much more immediate than those relating to the rubber product. Enormous quantities of timber are required by the Cerro de Pasco and other mines, and with the development of the mines that is now going on the demand is growing. This timber is brought down from Puget Sound to Callao and then shipped over the Central Railway, the ocean and railway freights making it very expensive. Some of the preliminary surveys, it is stated, have shown that large tracts of timber lie along the route to the Ucayali, not more than 60 or 70 miles distant from the existing railway. These and other considerations render it probable that while purchases of rails and material may not be made during the current year, some orders may be given for delivery in 1909.

ANOTHER PROPOSED ROAD OVER THE CORDILLERAS.

The Ucayali concession also authorizes a line from the same point on the Cerro de Pasco Railway to a specified point on the coast, and if this line ever should be built there would be through direct communication from the Amazon's tributaries to the Pacific. This line would parallel the Central Railway and would compete with it. Though the Cordilleras would have to be crossed at an elevation equal to that of the Central, or nearly 16,000 feet, it is claimed that many of the engineering obstacles which that railway encounters could be avoided. The subvention for this line to the Pacific is fixed at £475,000, or $2,375,000, in bonds at the rate of $7,500 per kilometer. For reasons unnecessary to detail this project does not receive the

same encouragement that is given the line to the Ucayali, though it has some stout advocates, who are said to be willing to engage in it.

The Peruvian treasury has husbanded its resources for railway building prudently, and while a number of paper projects receive consideration, much conservatism is shown in the enterprises actually entered upon. The gold standard is maintained and the loans contracted for railways and other public works have not been large, so that the credit of the Government is good, and if in the future it should seek to supplement the means obtained from the tobacco revenue by a small loan this probably could be obtained. However, such a plan is not now in favor and it is sufficient to know that the Government has the resources available to meet all the obligations that will be incurred in completing the extensions and prolongations now under construction or which have been authorized by the Congress. These measures mean that before the end of the year additional orders are likely to be placed for rails and material. I have already indicated the probability that in spite of the belief that the material now being delivered for the railway system of the Peruvian Corporation and for the Cerro de Pasco Company is sufficient, both these companies will be calling for additional material before another year begins. The 3 chief prospective purchases of railway material in Peru are stated in the memorandum which I forward to the Bureau of Manufactures. [Names of prospective purchasers furnished upon application.]

MEXICO.

NEW SCHEDULES GIVING UNIFORMITY OF FREIGHT CHARGES.

Consul W. D. Shaughnessy, of Aguascalientes, reports as follows concerning the new freight rates on Mexican railways, as agreed upon by the parties interested, and which will take effect on April 1, 1908:

During the last three months the Mexican tariff commission has been investigating the proposed increases in freight rates on ore shipments, which have been advocated by the principal railroads of Mexico and strongly contested by the shippers.

A uniform increase of charges, to become effective April 1, 1908, has been agreed upon by the railroads, smelting interests, mine owners, and other shippers, approved by the tariff commission, and referred to the department of communications for final approval. No party can attempt to reduce these rates without violating their agreement. There have been protests made by the Mexican Central and Mexican National railroads against the commission because of the date for the rates to become effective and of its recommendation to the department of communications that the rates on concentrates remain the same. The mining interests contend that, in view of the ores which have been mined on the basis of the old rates and now await shipment, an opportunity should be afforded to place them at the smelters.

INCREASE ON ORES, HOW COMPUTED.

The new ore tariff, proposed to become effective April 1, on the Mexican Central and Mexican National railroads, makes an increase of 10, 20, and 30 per cent on the ore tariff now used by the Mexican National, according to the different classes. The ore is divided into three classes: Less than $25 Mexican in value (Mexican dollar=50

cents American currency); over $25 and not exceeding $50; and over $50—i. e., ores of third class, $25 or less, bear an increase of 10 per cent; ores of second class, not exceeding $50, 20 per cent, and ores of first class, over $50, an increase of 30 per cent. The valuations are arrived at on a fixed basis of value for the different metals, from the smelter assays, this basis being fully shown in the railway tariffs, which are as follows: Silver at $36.50 per kilo (kilo=2⅕ pounds); gold at $1.60 per gram; copper 30 cents per kilo. Lead at $1 per unit of 10 kilos, when the London quotation is £15 per ton of 2,240 pounds. For each change of 1 shilling there should be added or deducted accordingly $\frac{1}{100}$ of 1 cent per kilo, or $\frac{45}{100}$ of 1 cent per unit of 10 kilos. Lime and iron at 15 cents per unit of 10 kilos.

From the total of the above values added together shall be deducted the total of the following items: What is known as insoluble matter, as usually determined at the commercial smelting works, shall be charged for at 20 cents per unit of 10 kilos. If over 5 per cent of sulphur is contained in the ore, such additional percentage shall be charged for at 50 cents per 10 kilos. A further deduction shall be made of $12 per 1,000 kilos.

MATTE RATES AND RATES BY CLASSES.

The copper matte situation will not be affected, as was erroneously stated in my previous report in Consular and Trade Reports, the rates being as follows (kilometer=0.62 mile):

Aguascalientes from—	Kilometers.	Copper matte rates.	Aguascalientes from—	Kilometers.	Copper matte rates.
San Luis Potosi	225	$3.18	Torreon	551	5.51
Cavitas	231	3.21	Stalforth	923	12.18
Salamanca	253	3.32	Rosario	944	12.83
Celaya Junction	296	3.53	Terrazas	1,064	7.84
Tlaxcoapan	521	5.20	El Paso, Tex	1,386	7.84

The freight rates in Mexico are on two bases: The regular class rates, and those known as specials. Class rates are given by distances on "local freight," and the specials, which cover only carload shipments, are given by distances and between stations. The increased rates which went into effect on the Mexican Central Railroad on August 9, 1907, are the same as those in effect on the National Railroad, the increase being from the third to the twelfth classes, inclusive. The actual rates for the twelve classes, in Mexican currency, per metric ton are given as follows, the minimum distance being 15 kilometers, with the exception of the International, on which the minimum distance is 1 kilometer:

Railroads.	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.
Mexican Central	$0.90	$0.86	$0.82	$0.78	$0.74	$0.70	$0.66	$0.62	$0.57	$0.53	$0.50	$0.45
Mexican National	.90	.86	.82	.78	.74	.70	.66	.62	.57	.53	.50	.45
International	1.50	1.35	1.29	1.21	1.14	1.07	1.01	.96	.90	.84	.80	.75
Interoceanic	.90	.86	.83	.80	.76	.73	.70	.66	.62	.59	.56	.53
Hidalgo	.90	.86	.83	.79	.75	.71	.68	.64	.60	.56	.53	.49
Ramal de Matehuala	.75	.72	.69	.65	.61	.59	.55	.51	.48	.44	.41	.38
Michoacan y Pacifico	1.05	1.01	.97	.93	.89	.85	.81	.77	.72	.68	.65	.60
Veracruz al Pacifico	1.20	1.13	1.06	.99	.93	.86	.79	.72	.65	.59	.52	.45
Tehuantepec National	1.20	1.13	1.06	.99	.93	.86	.79	.72	.65	.59	.52	.45

At the same time several special rates were raised, the increases being on wheat, corn, cotton seed, alcohol, tequila, wines, etc., and the

minimum carload was increased from 10,000 to 15,000 kilos (10 to 15 metric tons). Native products are charged for according to a differential tariff, which is lower in proportion to the charges on imported goods governed by the general tariff.

NEW ROAD TO BE BUILT.

CONSTRUCTION OF ZACATECAS AND ORIENT LINE SOON TO BEGIN.

Consul Thomas W. Voetter, of Saltillo, advises that it is reported that construction is to begin shortly upon the Zacatecas and Orient Railroad, concerning which he says:

This road is projected to run from Camacho station of the Mexican Central eastwardly via Mazapil to Gomez Farias station on the National of Mexico, about 100 miles. It is to be made standard gage, so that equipment from connecting lines can be used. Ultimately it is planned to extend the road to Linares on the Monterey-Tampico line of the Mexican Central. There is no Federal subsidy. The country through which the line will pass has considerable mineral resources, now undeveloped. There are also possibilities of developing agricultural resources, but extensive irrigation systems will be required before any tonnage can be secured from this source. [The names of the concessionaires of the foregoing line and of a business man interested in the development of the territory it will traverse may be obtained from the Bureau of Manufactures.]

GUATEMALA.

NEW LINE BETWEEN ATLANTIC AND PACIFIC—TRADE POSSIBILITIES.

Consul-General William P. Kent, of Guatemala City, reports that on January 19 there occurred at the capital of Guatemala the formal ceremonies attending the installation of traffic over the completed line of the Guatemala Railroad. Its commercial importance is shown by the consul-general as follows:

The event was attended by great popular rejoicings, by official ceremonies, and by the presence of Gen. George Davis, special envoy of the Government of the United States. Nothing has ever occurred in Guatemala of greater national significance than the completion of this railroad, upon which is based the expectation of great internal development, closer relations with the United States, and a widely expanded trade with all countries. Its construction has been a great feat of engineering and is largely the fruit of American engineering, capital, and skilled labor.

About 25 years ago the Government of Guatemala undertook the construction of the road as a national enterprise, but after building 133 miles it turned the line over to American capitalists, who have now brought it to a successful conclusion.

AID TO AMERICAN COMMERCE.

It is impossible to dwell with too much emphasis upon the advantages to American exporters that arise with the opening of this railroad. Its length is 196 miles, and it connects Guatemala City, the capital of the Republic, with Puerto Barrios, on the Atlantic coast.

The ships of the United Fruit Company, at present plying weekly to and from New Orleans, accomplish the voyage usually in five days.

It is expected that a faster line will soon be placed in service and the voyage will then be reduced to three days. When this is accomplished it will be possible to journey from Guatemala City to New Orleans in five days, and to Washington and New York in seven. No exporting country will hereafter possess advantages of transportation or nearness to this market compared with those of the United States.

The Guatemala Railroad connects at the capital with the Central Railroad, which itself connects with the ports of San Jose and Champerico, on the Pacific coast of Guatemala. The distance from the capital to San Jose by the Central is 75 miles. Thus a third transcontinental line is now completed across Central America, connecting by a railroad of 271 miles in length the waters of the Atlantic and the Pacific.

UNITED KINGDOM.

INCREASE IN MILEAGE—RECEIPTS AND EXPENDITURES.

Consul-General Robert J. Wynne, of London, furnishes the following statistics concerning the railways and tramways of the United Kingdom:

The total railway mileage of the United Kingdom at the close of 1906 amounted to 23,063, an increase of 216 miles over that of the previous year. The paid-up capital increased from $6,363,005,000 in 1905 to $6,434,415,000 in 1906. The number of passengers carried on the several lines in 1906, not including persons holding season tickets, was 1,240,347,000, from whom fares amounting to $249,413,888 were collected, against 1,199,022,000 persons carried and $243,600,600 collected in fares in 1905. The quantity of merchandise conveyed in 1905 aggregated 461,139,000 tons, from which the receipts amounted to $282,057,945, against 488,790,000 tons and $291,971,085 in receipts in 1906, making the total gross receipts from all traffic $525,658,545 in 1905 and $541,384,965 in 1906. To these sums must be added the receipts from miscellaneous sources, amounting to $41,996,550 in 1905 and $44,754,690 in 1906, which brings up the total gross receipts to $567,655,095 and $586,139,655 for the two years, respectively. The total expenditures in 1906 amounted to $363,989,270, an increase of $13,665,955 over those of the preceding year.

At the close of 1906 there were 2,240 miles of tramways in operation in the United Kingdom, with a paid-up capital of $289,692,085, against 2,117 miles and $257,507,050 in capital in the corresponding period of 1905. The number of passengers carried on the lines in 1906 was 2,236,012,777, an increase of 168,099,551 over the previous year. The gross receipts in 1906 amounted to $53,215,890 and the expenditures $34,178,815, against $49,585,130 in receipts and $32,825,245 in expenditures in 1905.

SHEFFIELD TRAMWAYS.

MUNICIPAL OPERATION OF STREET CAR LINES.

Consul Charles N. Daniels, of Sheffield, reports that in a recent lecture by the general manager of the Sheffield tramways the following facts and figures were given:

Sheffield was the first municipality to own its tramways; not to own and operate them, Huddersfield claiming that distinction, whereas Sheffield con-

structed the tramways and leased them to a company. The city corporation began working them as a municipal undertaking July 11, 1892, and in nine years had increased them to four times their original length. There are 268 passenger cars, 100 being covered top cars, 110 open top, and 58 single-deckers; a new car costs $3,800 and weighs about 10½ tons.

The fact that the department has direct control of the generating station enables it to obtain its power cheaper than any municipal tramway purchasing its power. While the power costs Sheffield 1.316 cents per unit, Manchester pays 2.518 cents, Bradford 2.28 cents, and Liverpool 2.354 cents. At the Manchester rate the cost to Sheffield would be $156,340 more than at present. Seventy-three miles of trolley lines are in use, 25 miles of which have been renewed during the past year.

The average number of cars working each day approximated 185. The first car out of the barn is at 4.10 a. m.; last car in at 12.58 a. m. On an average each car runs 117 miles per day. Most of the accidents are trivial, and the principal cause is passengers entering and leaving the cars while in motion, the majority of those injured being women. In one week 18 passengers were injured owing to this practice, of whom 12 were women. Last year the compensation paid for injuries was $6,345, or 93 cents per 1,000 miles run, or about 8 cents per 1,000 passengers.

WORKING EXPENSES AND REVENUE.

The entire system furnishes regular employment for 1,500 men, and the weekly wage bill is $12,165. During the time of municipal management the hours of labor have been reduced 40 per cent, while the rate of wages has been increased for motormen 125 per cent and for conductors 200 per cent.

In 1907 the total number of miles run was 7,000,000; passengers carried, 74,000,000; receipts, $1,396,542; working expenses, $827,220; average length of 2-cents stage, 2½ miles. The receipts per car mile run are 19¾ cents and the total working expense a fraction under 12 cents, leaving 7¾ cents to meet interest, sinking fund, and all other charges.

The average number of journeys made per head of the population is 166 per annum; the average fare paid is 2.8 cents. Compared with other towns Sheffield does not stand very high as regards miles of track laid down, the number of inhabitants per mile of track in Sheffield being 12,450, as compared with 6,100 in Bradford, 7,923 in Leeds, 8,344 in Manchester, and 11,900 in Glasgow. With reference to the last set of figures it may be stated that while Glasgow has a population of 798,778 and an acreage of 12,796, Sheffield has a population of 450,000 and an acreage of 23,662.

The tramway permanent way has cost since 1896 $2,126,442, a large amount of which has been spent in paving a portion of the street surface on 35 miles of street. In addition to $53,651, which is paid by the department in general district and poor rates, a further tax is made upon the tramways for street improvements, the tramways paying interest and sinking-fund charges on $1,315,913 on that account at the present time.

BRITISH INDIA.

LOWER CHARGES MADE FOR MOVEMENT OF STOCK FOOD.

Consul-General William H. Michael, of Calcutta, makes the following report on the reduction of freight rates on the railways of British India for cattle feed, with some extracts from the recent report of the East Indian Railway:

The rates were 2 annas (4 cents) per ordinary wagon (car) per mile and double this rate for bogie wagons on the standard gage railways, and on the meter gage lines 2 annas (4 cents) for the first 50 miles, 12 annas (24 cents) for the next hundred miles, and 1 anna (2 cents) for the additional distance per ordinary wagon per mile, with double these rates for bogie wagons. It was a source of considerable satisfaction that the railways generally agreed to this.

The government of India, however, realizes that even greater assistance than that which is secured by these specially reduced

rates is necessary in order to effect the movement of fodder in quantities sufficiently large to provide for the safety of the cattle within the famine area, and have decided, with immediate effect, that freight on consignments of fodder (excepting fodder for the army department) booked to stations in the provinces mentioned shall be recovered from the consignee at the rate of one-half an anna (1 cent) per four-wheeled wagon per mile and 1 anna (2 cents) per bogie wagon on consignments, and that the balance of freight calculated at the special reduced rates agreed to by the railways shall be paid by the government.

The Punjab Blue Book states that East Indian Railway, and other lines, and steamboat lines, have reduced rates on carrying cotton piece goods and yarn, kerosene oil and sugar between points in the Punjab and Calcutta. The value of the exports from the Punjab by rail and river for 1906–07 is stated to be $72,943,465, and the value of imports for the same year to be $74,568,150.

EXCELLENT SHOWING MADE BY AN EXTENSIVE TRUNK LINE.

According to the half-yearly report of the East Indian Railway, the company has in operation 2,206½ miles of road, of which 1¾ miles are quadruple, 2¼ miles are triple, 534¾ miles are double, and 1,668 miles are single line. The total length is 41½ miles more than it was at the previous half year, due to the opening on April 15, 1907, of the Kurjahlipur Branch. In addition to the above, the Delhi-Umbala-Kalka, 162¼ miles, South Behar, 78¾ miles, and Tarakessur, 22¼ miles, were worked by the company, making a total length of 2,469¾ miles.

The total capital outlay was $185,616,730, giving an average cost of $80,675 per mile on 2,206½ miles. Since the last report there has been a further issue of debenture stock to the extent of $10,000,000, bearing interest at 3½ per cent, at a discount of 5 per cent. The capital expenditure during the past half year was $2,412,819, of which $2,173,490 was for rolling stock and works for the open line. The gross receipts during the same period amounted to $14,688,920, and the working expenses to $5,379,751, leaving $9,309.169 as the net earnings. After paying interest and other charges against net earnings, there was a surplus of $3,539,447. The gross receipts are the highest on record, being an increase of $554,972 over last year's figures.

Of the expenditures, salaries and office expenses amounted to $844,690. Of this, general administration cost $34,248; engineering, $193,675; locomotive, $147,137; carriage and wagon, $41,113; traffic, $180,443, and audit and account, $79,140, the balance being distributed in other directions.

The earnings are about as much now as before the strike. For the week ending December 14, 1907, the earnings amounted to $557,333, against $544,335 for the same period in 1906.

NORWAY.

PROJECTS WHICH ARE LIKELY TO BENEFIT AGRICULTURE.

Consul B. M. Rasmusen, of Stavanger, writes of the need of improved inland transportation in Norway:

Emigration has reduced the population of this district to such an extent that necessary help for farm labor can no longer be obtained.

While people are thus leaving for other countries, large tracts of land that need only to be cleared and drained lie untouched, owing to the scant railroad transportation facilities.

The railway from Stavanger to Egersund, constructed about twenty-five years ago, gave a start to the reclamation of waste land, which has resulted in the transformation of Jaederen into one of the chief agricultural districts of Norway. The construction of an electric railway from Haugesund to Odda, a distance of 75 miles, which is now under consideration, would undoubtedly prove of similar benefit to that section. Another transportation project is the organization of automobile routes from Stavanger to adjacent points. This consulate is ready to furnish further information as these plans develop.

WATERWAYS.

CANADA.

FURTHER STEP IN THE GEORGIAN BAY CANAL ENTERPRISE.

Consul A. G. Seyfert, of Collingwood, advises that the engineer in chief of the Georgian Bay Canal survey has presented to the Dominion Parliament an extensive report of the year's work, which was largely confined to the French River between Georgian Bay and North Bay, a distance of 31 miles. The consul summarizes the report thus:

The approximate estimated cost of the canalization of the French River is $14,000,000. The plan of the Georgian Bay Canal contemplates a ship canal of a depth of 22 feet, and provides for the creation of three reaches between the Georgian Bay and Lake Nipissing by means of locks and dams, the lift of the locks varying from 22 to 24 feet.

The report also contains a general review of the whole scheme from Georgian Bay to Montreal, a distance of 440 miles. It is pointed out that the ascent from Georgian Bay to summit level is 99 feet, while the descent from summit level to Montreal is 659 feet, making a total lockage of 758 feet. This would be overcome by 27 locks, varying in lift from 10 to 50 feet. The report points out that the proposed canal would mean a great saving in distance from the interior to the British market. From Fort William to Liverpool via New York is 4,929 miles, while via the Georgian Bay Canal it would be only 4,123 miles, a saving of 806 miles in favor of the route via the Georgian Bay, Ottawa, and Montreal. The route is also described as practically a chain of deep lakes or wide river expansions, so that the construction of the proposed canal would involve the canalization of only 275 miles, leaving 357 miles of free navigation.

TRANSPORTATION ECONOMY—WATER POWER.

It is computed that the route will be about two days faster for each trip from the head of the lakes to an ocean port than any other route, apart also from its advantages in having an enormous superiority as to carrying capacity. This would naturally have a great tendency to reduce transportation rates on grain and other products, and in case of congestion at the terminal elevators at Port Arthur and Fort William, before the close of navigation, the great depth of

the waterway would enable the largest lake boats to reach an ocean port fully loaded without breaking bulk.

The geographical position of the waterway is also excellent, as it will be independent of all international waters, being fed at its summit by waters well within Canadian territory. Its northern latitude would also be of some advantage for the transportation of perishable foodstuff during the hot season, as compared with the southern route through Chicago and the Mississippi River. The canalization of the Ottawa River will also be of distinct benefit by creating practically unlimited water power more than half developed, which will be available for all kinds of industries and from which a revenue could be derived.

One objection made by some of the opponents of the project, that it would freeze up sooner than the St. Lawrence, is met and controverted; but it is pointed out that even if the average closing of Lake Nipissing is two days earlier than Montreal, navigation could easily be maintained by a couple of steel-clad tugs.

COLOMBIA.

SUBSIDIES SUBSTITUTED FOR EXPORT BOUNTIES ON MAGDALENA RIVER.

Consul Isaac A. Manning, of Cartagena, furnishes the following information concerning the new regulations governing the carrying trade on the Magdalena River in Colombia:

After a brief trial of the export bounties on coffee and other articles paid to the transportation companies doing the carrying trade on the Magdalena, the Government has suspended the payments, and in lieu thereof the companies will receive a subsidy of $1,000 gold per round trip between Barranquilla and Calomar and El Dorado on the upper river, for which they will give a reduction of freight rates on certain articles for export, which come almost altogether down that route.

The freight rates up river, from Barranquilla and Calomar to the Bodegas de Bogota and Caracola are $17 and $15.75 per metric ton, respectively, and from the latter places down to Barranquilla and Calomar $12.50 and $11.50 per ton, with relative reductions to intervening points.

All classes of machinery of an industrial or agricultural nature or for mining uses, all kinds of tools and implements, natural and chemical fertilizers, wire fencing, iron or metal roofing, water pipe, hydraulic cement, lubricating oils, live plants, and sacks for coffee must be carried at a discount of 25 per cent from the above rates, while dried fish and soap, candles and cotton and woolen goods manufactured in the country shall be carried at a discount of 50 per cent.

Of the "down river freight" coffee and hides for export must be carried at a discount of 25 per cent, and also sugar. Cotton, vegetable fibers, flour, potatoes, corn, rice, wheat, and small fruits, sent to the coast for export, as well as military supplies, enjoy a discount of 70 per cent from the tariff rates.

First-class passenger from Barranquilla or Cartagena to the Bodegas de Bogota $32, with relative reductions to intervening points.

For a stateroom on the steamers there is a surcharge of 20 per cent. Second-class passengers pay two-thirds of the regular tariff and third class or "deckers" pay one-third. First-class passengers are allowed 330 pounds of baggage, second class 165 pounds, and third class 110 pounds.

BICYCLES IN GERMANY.

REGULATIONS GOVERNING THEIR USE ON THE ROADS IN BADEN.

Consul E. Theophilus Liefeld, of Freiburg, furnishes a copy of the regulations concerning the use of bicycles on public roads and in public places in the Grand Duchy of Baden, which went into effect January 1, 1908. A brief summary follows:

Every bicycle must be provided with a good working brake; a clear-ringing bell must be used as a warning signal; and a bright-burning lantern with colorless lens which must be used when it is dark or during a heavy fog. The cyclist must have on his person a card of identity showing that he has a right to ride a wheel, which he must exhibit upon request to the proper authorities. The card of identity costs 23.8 cents. Foreigners are also obliged to carry cards of identification which are good all over Germany.

The speed of riding is to be controlled so that there will be no danger of accidents and collisions. When riding on roads which are obstructed from sight or in dense fogs, turning from one street into another, passing over narrow bridges, as well as riding down hill, etc., the cyclist must ride cautiously and slowly. In all these cases he is not permitted to ride without holding the handle bars, or removing his feet from the pedals. The bell is to be rung at all places obstructed from the sight of the wheelman. The passing around of vehicles is forbidden, if it disturbs traffic in any way or is liable to frighten animals.

The riding of bicycles, except upon special paths for wheelmen, is permitted only upon such roads as are used for general traffic; the wheelman must not ride on embankments or sidewalks, intended for pedestrians, if such are at a higher level than the roadway. Special paths for wheelmen can be closed at any time by a police ordinance. Racing is not permitted on public roads, and can be allowed only upon special permission of the authorities.

FINANCIAL.

MUNICIPAL ADMINISTRATION.

GERMANY.

FREEDOM OF MUNICIPALITIES UNDER THE LAW OF THE EMPIRE.

The following information concerning gas plants in the cities of Saxony is furnished by Consul George Nicolas Ifft, of Annaberg:

Under German law municipal corporations may and do engage in almost any kind of business which the council may regard as for the welfare of the municipality, ranging from the ownership and operation of railroads, street railways, mines, smelters, and factories, to mercantile establishments, bakeries, and butcher shops; or they may, and often do, fix the price at which bread, meat, beer, or any other commodity, regarded as among the necessities of life, may be sold. These powers are often invoked to prevent monopolies or the raising of the price of foodstuffs, through combinations of tradesmen. It is noteworthy that such powers are, in the main, wisely used, a fact due largely to the habit of selecting city, town, or village councilmen from the ranks of men of large affairs and independent means. Also, in a measure, to the fact that a councilman's first term is for six years, and that a reelection is for life.

RESULTS OF MUNICIPAL OWNERSHIP.

Municipal ownership, however, even in Germany, is not without its critics, the burden of the criticism being that similar conditions do not produce similar results, or that the management of the municipal plants seems to aim at the earning of large profits, rather than the general welfare, through the delivery of necessities at cost prices. The municipal gas plants of the principal cities of the Kingdom of Saxony may be cited as examples along both these lines of criticism.

As early as 1833, 1836, and 1844, Dresden, Leipzig, and Berlin, respectively, had gas plants, but for a number of years thereafter the gas plants in Germany very generally remained in the hands of private parties, and mostly in those of foreign corporations. When the gas industry began to find a place in even the smallest villages, and to become a more and more important economical factor in community life, these plants were taken over by the cities. Existing plants were either bought, mostly at large prices, or entirely new plants were built, until to-day gas plants owned or controlled by the municipalities are the rule, and private gas plants the rare exceptions.

PRODUCTION OF GAS AND BY-PRODUCTS.

There is a general uniformity in the construction and operation of German municipal gas plants, brought about through the thor-

ough organization and frequent meetings of gas superintendents and gas experts. Reasonable uniformity as to results should follow, but the complaint is that such results are not obtained; that, even in neighboring cities, where conditions are practically the same, results differ widely, as will be seen from the following statement showing the production of gas coke, and tar from a metric ton of coal in the gas plants of the principal cities of Saxony:

City.	Gas.	Coke.	Tar.
	Cubic feet.	*Pounds.*	*Pounds.*
Chemnitz	10,519	1,294	152
Dresden	11,915	1,296	139
Leipzig	10,413	1,450	123
Plauen	9,954	1,265	126
Zwickau	11,519	1,506	154

Leipzig and Dresden are cities of more than 500,000 population each, Chemnitz 250,000, Plauen 105,000, and Zwickau 70,000.

COST TO CONSUMERS AND COST OF PRODUCTION.

Most of the Saxon city gas works earn handsome revenues over and above reasonable interest on the money invested, which lends some color to the criticism that they are operated to make money rather than for the purpose of furnishing the cheapest possible gas supply. Another frequent complaint is that their management is even more autocratic than when they were in the hands of private corporations.

For the larger Saxon cities the cost of gas to the consumers, the cost of production, and the profits thereon, per 35.3 cubic feet, are given as follows, in American cents:

City.	Cost to consumers for—		Cost of production.	Profit.
	Light.	Cooking and motors.		
	Cents.	*Cents.*	*Cents.*	*Cents.*
Dresden	4	3	2.9	1.5
Leipzig	4⅛	3	3.9	1.0
Plauen	4½	3¼	4.2	.6
Zwickau	4¼	3	1.8	1.5

These prices, compared with those of some of the other German cities, are high. In Düsseldorf and Eberfeld, for example, gas for cooking is supplied at 2 cents per 35.3 cubic feet. More noteworthy, however, are the differences in the cost of production—as for instance, 4½ cents in Plauen and only 1.8 cents in Zwickau. These are neighboring cities of about the same size. Other parts of Germany show even greater differences. In Kiel the excess of earnings over cost of production is only one-half a cent, while in the neighboring city of Hamburg it is 1.9 cents.

DENMARK.

A GRADUATED INCOME TAX IN THE CITY OF COPENHAGEN.

Mr. M. F. Egan, American minister to Denmark, furnishes a number of translations from Danish newspapers in regard to certain

important changes proposed in taxes in the city of Copenhagen. The first, from the Nationaltidendo, reads as follows:

It is proposed to introduce a communal property tax for the first time in the history of Copenhagen, and in place of the present income tax on a fixed scale an income tax on a rising scale, whereby the tax on incomes from 800 to 4,200 kroner (kroner 26.8 cents) is reduced. The amount lost on the above amounts, together with the surplus in the proposed taxation, is to be paid by those having incomes over 4,200 kroner. The scale is as follows:

Amount of income.	Rate of taxation.
Under 900 kroner	½ per cent.
From 900 to 2,000	½ per cent of the first 900 and 2½ per cent of balance.
2,000 to 4,000	1.6 per cent of the first 2,000 and 3.2 per cent of balance.
4,000 to 10,000	2.4 per cent of the first 4,000 and 3.4 per cent of balance.

This continues to increase until the maximum is reached, which, for incomes of 100,000 kroner and above, is 4.4 per cent of first 100,000, and 5.6 per cent above that sum. However, this does not give the final tax. It is proposed to have a moving scale of taxation of wide extent. The town council may raise the property and income tax by one-fifth of the average tax during the last three preceding years.

The Politiken newspaper has the following to say:

The report of the committee on this important matter is a little book of about 50 pages. The proposed income and property tax will give an additional yield of 650,000 kroner. Of this sum 230,000 kroner is derived from the income tax and 420,000 from the property tax. A rising scale is introduced, according to which all those persons whose incomes are less than 4,200 kroner a year will pay less in taxes than heretofore; those who have an income up to 7,000 kroner pay a small increase in tax; those who have an income of 10,000 kroner pay only 50 kroner more than now. Thus the whole burden of the new taxation will fall upon the large incomes.

The town council is given a certain amount of freedom in determining whether the full amount of the taxes shall be claimed every year or not. It may be increased or decreased, according to the state of the finances of the city. If, for instance, should the budget of the city demand a yield of 5,500,000 kroner as income and property tax, and should the present scale only yield 5,000,000, then they may raise both the income and property tax 10 per cent.

Another Copenhagen journal, the Berlinsketidonde, states:

In 1906 the number of taxpayers in Copenhagen was 87,661. Of these, 81,919 will pay a less tax if the report is accepted, while the rest, namely, 5,742, will pay the whole increase in taxation of about 230,000 kroner. They will also pay the decrease in the tax of the 81,919, and will thus bear the whole additional burden.

ENGLAND.

SHEFFIELD'S HEAVY DEBT LOWER THAN SOME OTHER CITIES'.

Consul Charles N. Daniels, writing from Sheffield, says that the growth of municipal trading by the cities of England during the last decade or two has been accompanied by a steady increase in municipal indebtedness, some of the facts of which he gives:

Sheffield for some time has had the matter under consideration by a special committee of the council, and its recent report shows that the outstanding loan debt of the city at the end of the financial year was $43,063,445, after deducting sinking fund on hand. This, for a city of not more than 450,000 inhabitants, is a considerable indebtedness; the committee congratulate themselves, however, that big as

this city's debt is the amount is $19,464,000 less than that of Leeds, $29,196,000 less than Liverpool's, $38,928,000 less than Birmingham's, $43,794,000 less than Glasgow's, $68,124,000 less than Manchester's, and $102,186,000 less than London's. During the year the debt increased $1,206,768, the capital expenditure during the same time being $1,051,056. Of this amount nearly one-half, $491,466, was spent in education. The other principal items were: District rate account $160,578, dwelling-house improvement account $83,722, water $107,052, tramways $63,258, electric lighting $102,186.

The income from rates during the same period was $2,755,876, the expenditure $2,880,696. Taking the corporation as a whole, the payments for the year were about $8,515,500.

The income continues to increase; the following principal items for the year being compared with those of the preceding year:

	Present income.	Previous year.
Water rate	$782,861	$749,788
Tramways	1,379,155	1,242,828
Electric supply	338,021	301,555
Markets	155,303	150,398

As the capital expenditure has not been heavy the corporation borrowing has not been as large as in recent years. All the money required has been secured at 3½ per cent. During the year a general perfecting of the financial system has been inaugurated, which enables Sheffield to congratulate itself that in matters of finance it is not as bad as are many other cities.

FRANCE.

MUNICIPAL OPERATIONS GOVERNED BY THE CIVIL CODE.

Consul Chapman Coleman furnishes the following information concerning the public service in Roubaix:

The general and special laws governing municipal ownership and the operation of the public services (gas, water, electric light, street car, and telephone) in Roubaix, as well as in all other French cities, are contained in the body of the laws of France, known as the "Civil Code."

The municipality of Roubaix, like other French cities, conducts the services in question, or empowers private companies to conduct one or more of them, under concessions based upon contracts entered into, in accordance with the provisions of the general and the special laws of France, which govern such action.

The laws governing taxation of public service companies and of public services operated by municipalities are, in either case, those contained in the body of French laws. Such dues and compensation as accrue to the municipality from private companies operating public services, in consideration of concessions, are fixed by the rules, regulations, and general provisions of the contract entered into between the municipality and the particular company.

The city telephone service is conducted by the Government of France, in connection with the French post and telegraph services. The administrative authorities of that service have, however, declined to furnish a report respecting it. The following meager data in regard to the service, obtained elsewhere, may be of some interest:

The service is performed by 4 male and 63 female clerks; in 1906 the number of new subscriptions was 85, of withdrawals, 30; the total number of subscribers at the end of the year was 1,351, and the total receipts for the year $44,074.

BELGIUM.

NO STATE LAWS GOVERNING MUNICIPAL CORPORATIONS.

Consul-General Ethelbert Watts, of Brussels, furnishes the following information concerning the manner in which the public services are conducted in that city:

There are no state laws in Belgium governing municipal corporations. There are in Brussels nine separate municipalities, which are autonomous, and they, if approved by the provincial government, have the right to concede to any private person or company any public service within their respective limits. The municipal authorities, being elected by the taxpayers, are accountable only to them. The question has been brought before the chamber of deputies, and a law is pending which would restrict the rights of municipalities.

The municipal ownership and the operation of public services—such as water, gas, and electricity—are not governed by any special laws, except those made by the municipalities themselves. The telephone service is operated by the Government. The Government has jurisdiction over tramway companies, because the service is an intermunicipal one, and it would be impracticable to obtain concessions from the various municipalities through which the cars run, therefore only the Government has the right to grant a concession.

There are no laws governing the taxation of public companies or of public services operated by municipalities, these taxes being fixed by the municipalities themselves.

BANKING IN SPAIN.

AN AMERICAN BANK NEEDED—A MADRID BUSINESS MAN'S STATEMENT.

Théophile Bénard, a prominent business man of Madrid, sends the following interesting letter concerning "the banking facilities of Spain, and how they can best be improved, with a view to the development of American trade and other interests:"

Putting aside the private bankers, established in all the chief towns, it may be said that real banking corporations only exist in three cities or centers of intensive traffic such as Barcelona, a considerable focus of industry and trade; Madrid, the national capital the center of Spanish finance and administration; and Bilboa, the chief export harbor for iron ore. Those three cities possess banks of a certain importance, either Spanish institutions or agencies of French, German, and Argentine banks. In addition to the three cities mentioned there are small banks in Valencia, a considerable export harbor for fruit; Jerez, a center for wine; San Sebastian, a seaside resort possessing moderate industries; Santander, Gijon, Burgos, Valladolid, and Pamplona. These include the totality of our banking corporations, excluding of course the Bank of Spain, a chartered bank of issue, with branches in each provincial capital.

To sum up, the Barcelona district (east) holds ten banks, with a total share capital of $11,000,000; net profits, $680,000; deposits,

$96,000,000. Madrid (center), 4 banks with a total share capital of $15,300,000; net profits, $1,600,000; deposits, $57,000,000. Bilbao, Asturias, etc. (north and northwest), 10 banks with a total share capital of $9,600,000; net profits, $1,400,000; deposits, $316,000,000. The "deposits" include money and securities. Besides, the Crédit Lyonnais has established 5 agencies; the Deutsche Bank 2 agencies (Deutsche überseeische Bank); the Dresdner Bank 1; the Banco Español de Rio de la Plata 1—all those agencies being very prosperous and of considerable help to the trade of their respective countries.

Most of the Spanish banks have been created since the Hispano-American war, and though there is nothing to be said against the soundness of their constituent elements, it is the general belief among dealers of all classes that these banks look more for their profits toward speculations in gold and loans on securities than to giving facilities in discount, advances on consignments, warrants, document bills, documents credit, etc. Therefore, it seems obvious that, considering only the internal traffic in Spain, there is room for additional banks, whose main efforts would be directed to reaching medium or small dealers of good reputation and situation, who are now actually deprived of reasonable facility or credit in any of the markets.

DEVELOPMENT OF TRADE WITH SPAIN.

Looking now to the development of American trade with Spain, if I express the conviction that the American interests require necessarily and promptly the establishment of a special American bank for Spain, I shall but confirm similar opinions given by numerous United States consuls with respect to their respective posts all over the world, and made public in Daily Consular and Trade Reports. As a rule, American manufacturers and merchants grant no credit at all to foreign purchasers. This policy is undoubtedly a sound one to a certain extent, but on markets where the competition is keen and constant, where German merchants grant credits ranging from three to twelve months, sometimes more, I see no other means of extending American business than by accepting the risk involved in the grant of credits of at least three months, or establishing a bank with a proper local organization which will undertake to accept the risk.

It seems to me that such a bank need not be started with a large amount of capital, but should, on the contrary, start modestly, following the example of some foreign institutions which might be mentioned, which began very small and have since become considerable corporations. The bank should be created in connection with the chief American exporters of cotton, tobacco, staves, and petroleum, or importers of Spanish oil, ores, grapes, wines, and if possible backed by well-known American bankers. Special attention should be given to information, not only on the credit of exporters and importers, but also on possibilities of all classes toward development of trade between both countries. Facilities should be granted on consignments or personal security to worthy dealers, and the bank should be prepared in some cases, and according to the position of dealers, to substitute itself for the American vendor in the risk of the ninety days' bills accepted by the Spanish purchaser.

OTHER WORK FOR AN AMERICAN BANK.

The bank ought also to undertake the examination of new schemes of public works, railways, etc., on account of American firms, without taking a personal risk, but offering, with its character of American bank, such a preliminary guaranty of impartiality as would induce the American firms to move and secure the contract before it is taken by competitors.

The promoters of such a bank should not at the beginning apply to Spanish capitalists for the subscription of shares, but adopt the policy pursued by the active Banco Español de Rio de la Plata, which some years ago established an agency in Madrid, and having obtained a well-deserved credit on the market, has recently been able to place a substantial amount of its shares among the Spanish investors. On the other hand, the American bank should secure a certain degree of local support which would be a guaranty to both shareholders and customers.

To emphasize my opinion, I may say that the evolution of Spanish affairs as shown in my previous contribution to Daily Consular and Trade Reports, is going on in all directions. Our railways show a constant increase of receipts; our budget for 1906 has closed with a surplus of $20,000,000, and that of 1907 is likely to show a similar result. The gold premium oscillates within a narrow limit around 10 per cent, since the conclusion of the political Anglo-Spanish agreement; a greater activity prevails in mining developments; several hydro-electric schemes are in way of realization; a great amount of money is ready for sound investment, due to the consolidation of our public credit at a rate lower than 4 per cent and to a scarcity of debentures paying more than 4 or 4½ per cent.

It is now obvious to everybody, especially to English financiers, that Spain is going ahead and will claim the attention of foreign investors as soon as the circumstances of the money markets will warrant.

The bulk of American imports into Spain amounts to about $17,000,000, and consists of cotton, tobacco, staves, and petroleum, staple goods of absolute necessity. American sales of manufactured articles which could compete are not likely to increase much on the actual terms of cash.

MONETARY AFFAIRS.

GERMANY.

FINANCIAL STRINGENCY IN EMPIRE—CONTINUED INDUSTRIAL ACTIVITY.

Consul Talbot J. Albert, of Brunswick, furnishes the following information concerning the demand for money in Germany in 1907. He says:

The immediate cause of the crisis in Germany has been the intense business enterprise. A disastrous commercial panic has been solely averted by the beneficent operation of the power of expansion and contraction of the circulating medium, and the regulation of the rate of discount exercised by the Imperial Bank. There have been a number of minor failures of less carefully conducted business houses and banks, which would have succumbed, sooner or later,

without a crisis. As a whole the commercial, financial, and industrial enterprises of the country rest on a firm foundation, which has not been shaken by the monetary stringency.

There has been no overproduction or overspeculation. The demand for goods has not ceased. The traffic returns and profits of the railroads are exceptionally good. The prices for food, coal, and the necessaries of life are extremely high, and show no diminution. There is a demand for higher wages and higher salaries. Except in the building trades, where there have been strikes, there is, comparatively speaking, no labor out of employment. There is no cry of poverty, or evidence of panic. No mills or manufacturing establishments of importance have been closed. There has only been a scarcity of money, and the situation is gradually improving.

BANK-NOTE TAX—DISCOUNT RATES.

The German Government is considering the question of abolishing the limit on the quantity of notes which may be issued by the Reichsbank free of tax or an increase in their amount. It is asserted that the limitation is only a hamper on the bank, and has nothing to do with prudent banking, which depends upon the metal reserve of the bank to the outstanding circulation; that the tax was a compromise between the English system of banking and the unlimited issue of paper money.

The following is a list of the discount rates prevailing in important money centers in November at the height of the crisis, and their subsequent reductions when the stringency began to cease after the 1st of January, 1908: Bank of England: January 2—7 to 6; January 16—6 to 5; Bank of Germany—January 13, 7½ to 6½; Bank of Belgium—January 13, 6 to 5; Bank of Roumania—January 12, 8½ to 7½; Austro-Hungarian Bank—January 10, 6 to 5; Bank of France—January 9, 4 to 3½. It is to be noted that the rate of discount was higher in Germany than in any other country mentioned except Roumania. This is to be attributed to the intense business activity of the country and consequent demand for money.

BRAZIL.

FIRST YEAR'S WORKING OF THE CONVERSION OFFICE.

Mr. Irving B. Dudley, American ambassador to Brazil, transmits an article from the Brazilian Review of December 31, 1907, entitled "The working of the Caixa de Coñversão (Conversion Office) during the first year of its existence," from which the following information is extracted:

The Caixa opened its doors for the reception of gold against notes convertible at sight at 15d. per milreis, just one year ago, on December 21, 1906. At the time predictions of failure were freely indulged in, and the possibility of maintaining at par two distinct species of legal tender, one convertible on presentation at a fixed rate, the other inconvertible, merely credit paper, the gold value of which is entirely a function of the balance of foreign payments, was regarded, even in many well-informed quarters, as impracticable.

It is a fact that few of the gold notes are in active circulation. They have been withdrawn by the banks and others to serve as their cash reserves, but in doing so have displaced an equal value of inconvertible notes, which have thus come into active circulation.

The "fixation" of exchange, as we foresaw, has had another important effect, in so far as thereby banks and merchants have been able to effect a very much larger volume of business with much less money.

The function of the Caixa de Comersão is to prevent exchange going up by issuing notes against gold at 15d. per milreis, and from going down by redeeming these notes at the same rate.

The policy of the Government is to accumulate sufficient gold to guarantee the ultimate conversion of not only the new convertible issue, but of the mass of inconvertible notes, some 640,000,000 milreis.

Since the Caixa de Coñversão was opened on December 21, 1906, the maximum ninety-days' rate of exchange on London has been 15 1/32d. and the minimum 15 1/16d., a variation of only 1/32d. During the same period in 1906, 1905, and 1904, the variations were 3/8d., 4 1/32d., and 1 3/4d., respectively.

About October, the Bank of Brazil commenced buying bills for future delivery that were liquidated later on in gold, which was imported. From the commencement of November, 1906, to the end of October, 1907, the economic movement has been as follows:

Exports of merchandise	$291,464,295
Imports of merchandise	195,939,821
Excess of exports	95,524,474
Remittances on account of Government, joint stock companies, etc	58,398,000
Difference	37,126,474
Gold imported	28,571,950
Difference—invisible demand for remittances	8,554,524
Amount deposited up to December 21, 1907	33,776,520
Withdrawn	4,100,658
Remaining in deposit	29,675,862

Notes emitted 111,052,900 milreis; converted, 13,493,150 milreis; in circulation, 97,559,750 milreis; fractional coins issued, 8,048 milreis; total in circulation, 97,567,798 milreis, equivalent at 15d. to £6,097,988 ($29,675,862).

CANADA.

LARGE EXPENDITURES FOR THE DEVELOPMENT OF THE COUNTRY.

Consuls John E. Hamilton, of Cornwall, and Almar F. Dickson, of Gaspe, furnish the following report on the revenue and expenditures of the Dominion of Canada:

There has just been issued from Ottawa a statement of the revenue of Canada for the ten months ended January 31, 1908. The aggregate was $81,024,272, against $71,645,730 for the same period of the previous year. The expenditures on current account were $56,332,534, against $45,682,302 for the comparative ten months of the previous year.

The revenue for January, 1908, was $7,268,313, against $6,963,976 in January, 1907, and the expenditures for the same comparative months $10,665,448 and $8,632,194, respectively. The increase of capital expenditures in a greater ratio than the government receipts is due to public works and railways. On the new Transcontinental line so far $17,446,485 has been spent as against $7,308,071 up to January 31, 1908. The net debt of the Dominion stands at $259,504,613, an increase during January, 1908, of $5,761,161.

There are in the Dominion 46 railways operated by electricity, with a mileage of 815. In the year ended June 30, 1907, they carried 273,999,404 passengers and 479,371 tons of freight. The gross earnings were $12,653,905, and the net earnings $4,898,654.

SPANISH NAVY REORGANIZATION.

NEW REGULATIONS PROVIDE FOR CONTRACTS AND NEW EQUIPMENT.

In transmitting a translation of that part of the new law of January 6, 1908, providing for the reconstruction of the Spanish navy, which mainly concerns foreign manufacturers, Mr. William Miller Collier, American minister at Madrid, under date of January 10, comments:

It will be apparent that the Spanish Government contemplates the purchase of such material abroad. It is generally understood that the specifications on which the contractors are to bid will be published about the end of January, and that two or three months thereafter will be allowed for the formation of the Spanish corporation referred to in this law.

Attention is called to the total appropriations for naval work, which amount in round figures to 200 million pesetas (silver peseta now worth about 17¼ cents). Of this amount, however, only 170 millions, in round figures, are for the construction of new ships. This new construction will comprise 3 battle ships of about 15,000 tons each, 3 destroyers or submarines of about 350 tons each, and 24 torpedo boats of about 180 tons each. The law reads:

The acquisition and repair of equipment for the navy shall be carried out in accordance with the following rules:

1. Manufactured materials and articles to be provided by domestic industry—pursuant to the law of February 14, 1907, and provisions complementary thereto—and those which that industry is able to supply shall be obtained from it, pursuant to the terms of the respective regulations.

Materials and articles not covered by the preceding paragraph shall be obtained from abroad, but earnest efforts shall be made to establish within the Kingdom the manufacture of the articles most useful and important for the navy.

In the shipbuilding and repair yards belonging to the state there shall never be more shipbuilding than enough to meet the ordinary and permanent needs of the navy; their industrial facilities and their work shall be adjusted to those demands, and steps shall be taken to insure the perfect, prompt, and economical performance of that work, as well as the maintenance of the arsenals and dockyards in constant readiness to render such services in the national defense as may respectively be assigned to them.

AWARDING CONTRACT WORK.

2. In the yards of Ferrol and Cartagena work under state control shall as soon as possible be replaced by a system of contract with one or more industrial corporations domiciled in Spain, governed exclusively by Spanish laws, and subject thereto in all respects. In these contracts shall be contained all specifications of the reserves, guaranties, and requirements as to future pledges which the state may deem expedient. Under this system the said yards shall stand on a footing different from that of the military arsenals; to Ferrol preferably shall be assigned the building of large ships, to Cartagena that of similar vessels, and in framing the contracts for their undertakings a distinction shall be made between new naval work, new work for the fitting up and defense of the yards, and repair work of all kinds.

If in order to provide steady employment for the shops and shipbuilding trades, within the limits laid down in the last paragraph of the preceding rule, it should be deemed expedient to carry out in the said yards orders from private parties, such work may be combined with that of the state, due preference being always given to the public service and interest.

The contracts between the state and industrial corporations shall be based on public competition, reserving to domestic products, labor, and capital, the

largest share possible, using such factors in the way of state employees and equipment as may be available, and taking care to secure the most reputable and approved foreign cooperation as the best guaranty of good work.

Should there be no award, after one or more competitions, the Government shall reestablish work under state control in the yards of Ferrol and Cartagena, providing for industrial and technical cooperation associated with the state, within the limits of the credits allowed by law, until such time as it may be feasible to attempt the carrying out of the contract or of the subsidiary industrial cooperation. Work under state control in the said yards shall be confined to the prosecution of work commenced before the passage of this law, to repairs, and to the building of launches for the fishery patrol.

CUSTOMS EXEMPTIONS—IMPROVING GOVERNMENT YARDS.

The general contracts shall be exempt from the stamp tax (derechos reales) and payments to the state, as well as from the industrial tax.

The custom duties payable on dredges, barges, excavating drills, pumps, cranes, devices for submarine work, and transportation equipment (engines, dumping cars, and portable rails), which the contractors may import from abroad for work on dry docks and docks in our arsenals, shall be refunded when upon completion of such work the said equipment shall be exported from Spain.

Artillery, with such appurtenances as screws, mantelets, mountings, and other accessories which the Government may in its contracts agree to have imported from abroad, shall pay customs duties as a matter of form only.

The supervision and inspection of the work shall be so organized that, while the freedom of management and the manufacturing and economic control shall remain as independent as possible, the efficiency and reliability of the services agreed upon with the state may be amply guaranteed.

3. The yards at Cadiz shall be specialized for carrying out under state control new work, and alterations and repairs of artillery, and docking and repair of ships, as well as such new naval shipbuilding as may be essential for the permanent maintenance and efficiency of their working. In order, nevertheless, to encourage the domestic manufacture of artillery, the Government shall have the option of temporarily ceding to the corporation or corporations in charge of the industrial undertakings at Ferrol and Cartagena, or to some similar concern, the artillery shops at Carraca with the necessary storehouses, on terms similar to those prescribed for the yards of Ferrel and Cartagena.

LIFE INSURANCE IN HONGKONG.

COLONIAL GOVERNMENT'S NEW REGULATIONS PROVIDE SAFEGUARDS.

A colonial ordinance relating to life insurance companies has lately come into force in the colony of Hongkong, its provisions being summarized by Vice-Consul-General Stuart J. Fuller in the following report:

This ordinance relates to all sorts of associations formed to carry on the business of life insurance which desire to do so within the limits of the colony including mutual as well as proprietary companies. Under the terms of this regulation all such companies are required to deposit with the registrar of companies securities to be approved by the governor in council to the value of $50,000 Hongkong currency, equivalent to approximately $25,000 United States gold. Existing companies before continuing business are also required to make a similar deposit.

Companies may deposit approved securities to the value of $200,000 Hongkong currency ($100,000 gold), but, if they do not elect to do so they are required to deposit annually, up to the amount of $200,000, an amount equal to the total amount of premiums received by the company on account of policies issued or entered into in Hongkong less 25 per cent, and less also the net amount of losses or claims ac-

tually paid on policies entered into or issued in Hongkong. The whole or any part of this latter deposit may be a receipt given by any bank in Hongkong incorporated or regulated by or under any ordinance of the legislature of Hongkong or approved by the governor in council.

Deposits may be withdrawn and others substituted therefor, and the colonial government assumes responsibility for all loss or damage to securities deposited under the provisions of the act in question.

REPORTS AND INSPECTION.

Life insurance companies are required at the expiration of each financial year to submit statements of revenue account and all balance sheets in accordance with the prescribed form. Companies which concurrently with life insurance transact any other kind of insurance or other business are required to make a statement in specified form showing revenue account and balance sheet at the close of each financial year of the company.

Every life insurance company is required at intervals of five years or ten years, according to whether established before or after the commencement of the ordinance, to have an investigation made into its financial condition by an actuary, and to lodge an abstract of the actuary's report in specified form with the registrar of companies.

A further report giving various details in regard to the business is required annually on the prescribed form, and the important points are the average rate of interest at which the life-insurance fund of the company is invested at the close of each year, and also a table of minimum surrender values or a statement of the method pursued in calculating such surrender values, supported by instances of its application to policies of different standing and at different ages. [A copy of the new ordinance may be perused at the Bureau of Manufactures.]

EXPOSITIONS.

INTERNATIONAL DISPLAYS.

GERMANY.

CLASS OF AUTOMOBILES AND MOTOR BOATS EXHIBITED AT BERLIN.

The following report concerning the Berlin automobile and electric motor-boat exposition is furnished by Consul-General A. M. Thackara, of that city.

The International Automobile Exposition which recently closed was divided into two periods: The first, for pleasure and touring cars, extended from December 5 to December 15, and the second, for industrial automobiles and motor boats, from December 19 to December 22, 1907. The exhibits of automobile parts and accessories, which were located in the galleries of the building, remained the same throughout the exposition.

The exposition was held under the auspices of the Imperial German Automobile Club and the German Association of Automobile Manufacturers, Prince Henry of Prussia, the Emperor's brother, being the patron. The honorary exposition committee was composed of leading members of the automobile world of Germany and of foreign countries, including the president of the American Automobile Club. The working committee included representatives of nearly all of the principal German automobile manufacturing concerns and of the allied industries.

The exposition was inaugurated by Prince Henry, one of the most enthusiastic automobilists in Germany, and a great protector of the German automobile industry. For the second time the exposition was held in the beautiful building erected for exhibition purposes in the grounds of the zoological gardens.

CLASSES OF MACHINES EXHIBITED.

According to the official catalogue of the Motor Car Exposition there were 879 distinct exhibits shown by 317 firms, companies, and individual manufacturers. Of the exhibitors 283 were German, 9 French, 6 Belgian, 5 Italian, 4 Austrian, 3 English, 3 American, 3 Swiss, and 1 Russian.

At the exposition for industrial cars and motor boats there were 674 exhibits shown by 263 different firms, companies, etc., 245 of which were German, 7 French, 3 Swiss, 3 American, 2 English, 1 Austrian, 1 Belgian, and 1 Russian.

While in the expositions there was little that was strikingly novel, except, perhaps, in the low-priced cars, the beautiful work which was displayed indicates most clearly that the manufacturers of touring and business cars are reaching a standard of perfection upon which it will be difficult to improve.

There were to be seen two, three, four, six, and even eight-cylinder motors with vertical water-cooled cylinders with mechanically

operated inlet and outlet valves, which on practically all of the well-known motor cars were placed on both sides of the cylinders, in a few cases on one side, and exceptionally on top. The double V-shaped and air-cooled cylinders were only to be seen on the smallest and cheapest cars. With the exception of an American machine on which planetary transmission was used, all the larger cars had the sliding gear transmission, which appears to have stood the tests of ordinary practical work, as well as the strain of the great automobile races. It has therefore been adopted as a standard of construction by most of the European manufacturers. Both the bevel gear and chain drives were to be seen, with a marked preference for the former. A number of carburetters for using benzol, alcohol, etc., were exhibited, indicating that great efforts are being made to find a substitute for the more expensive benzine.

NEW ATTACHMENTS AND INVENTIONS.

There were also new types of electric sparking attachments on the principle of a magnetic make and break in the candle. This system dispenses with the pull-bars, cams, etc., and seems to give an equally good spark. The methods of ignition were about equally divided between the make-and-break and the jump spark. Many of the larger cars had the two ignitions, in which cases the high tension magnets with jump spark and the battery ignition, which can be worked independently, were used.

Ball bearings were used throughout on all of the best makes and pressed steel frames were universal.

Honeycomb coolers were mostly to be seen, although the flange-tube radiators were exhibited in the cheaper cars. Positive oil pumps for lubricating purposes have been almost universally adopted in the finer motor cars, but there were still drop-oilers operated by the pressure of the exhaust from the motor, mostly on the lower-priced vehicles. Revolving pumps for water circulation, with which practically every car was equipped, were driven by spur gears instead of chains, belts, or friction wheels.

There were two patented systems exhibited, which are intended to save the automobilist from the annoyance resulting from a punctured tire. The principle in each was to fill the inside of the tire with a gelatinous composition which in its consistency resembles soft rubber. It is forced into the tire under pressure, and it is claimed that owing to its nature, it will neither exude when the tire is punctured nor will the resiliency be affected. The composition is sold under a guaranty that it possesses all the qualities claimed for it and that it is not influenced either by the temperature or by changes in the weather.

LOW-PRICED CARS—AUTOMOBILE BODIES—INDUSTRIAL MACHINES.

The smaller and low-priced cars at the exposition attracted much attention. Many of them were of entirely new types, exhibited for the first time. The prices ranged from 2,500 marks ($595) to 10,000 marks ($2,380), for cars varying from 6 to 3 horse power. A number of firms had one-cylinder motors, but those of two and four cylinders were most appreciated. The exhibition proved that good, light touring cars could be purchased for from 6,000 to 12,000 marks ($1,428 to $2,856), according to horsepower, number of cylinders, number of changes of speed, etc. It was the opinion of most ex-

perts that the cars offered for these prices were of better value for the money than those which could be bought for from 2,500 to 5,000 marks ($595 to $1,190).

As a rule in Germany, bodies of automobiles are manufactured by carriage builders and sold separately, thus enabling the customer to make his own selection of the style and make of the "carrosserie." The exposition offered a splendid display of luxuriously upholstered and finely finished bodies, principally of the Landaulet and Limousine types. The tonneau, or open body, was seldom seen except on the lowest-priced cars. There were many exhibits of the so-called American summer hood, one of which, made by a firm in Gera, was so arranged as to be easily opened or closed by the chauffeur when the car is going at a high speed.

The great importance which the manufacture of motor vehicles for industrial and business purposes has attained was clearly indicated by the many cars for other than touring purposes which were exhibited during the second period of the exposition. There were to be seen motor-omnibuses, street cars, heavy trucks for carrying coal, iron, beer, etc., three and four wheeled delivery wagons in all sizes, police vans, fire apparatus, vehicles for military use, ambulances, taxameter cabs, etc. Automobile manufacturers have found it to their interests to supply the want which has been created by the rapidly increasing substitution of motor power for the propulsion of vehicles for which animals were formerly used. The demand for motor vehicles for industrial and business purposes will still continue to increase, so that in all probability this branch will prove to be the bone and sinew of the automobile industry.

ELECTRIC CARS AND MOTOR BOATS.

There were also exhibited many electric vehicles of various types, including one of the mixed system; that is, an electrically driven car with a four-cylinder benzine motor to furnish the power to a dynamo for generating the current. The Edison new storage battery was exhibited by a German company.

Cars driven entirely by electricity, owing to their simplicity of construction and absence of noise in running, are making slow but constant progress. In the exposition could be seen electric cars for almost every purpose, from a luxuriously appointed touring car to the lightest delivery wagon. Until a practical accumulator without too much bulk is made commercially possible the use of electric vehicles will necessarily be limited to districts where easy access may be had to power stations for recharging. Cars were exhibited which were guaranteed to run, at a moderate speed, a distance of 100 kilometers (62 miles) with a single charging of the batteries.

The motor-boat display, while not as extensive as at the Kiel Exposition last summer, was much larger and more complete than during the Berlin Exposition of 1906. It indicated most clearly the development which has taken place in the German motor-boat industry during the past few years. There were exhibited magnificent pleasure boats with inclosed apartments finished in mahogany, some of sufficient size and power to cruise at sea; boats for harbor traffic and for police purposes, motor yachts, smaller cabin and saloon boats for use on inland rivers and lakes, etc.

There was only one boat of American manufacture exhibited, a pressed-steel launch 23 feet long, with a 3-cylinder ferro motor of 18

to 20 horsepower, guaranteed to run 16¾ miles an hour in smooth water. The absence of American motor boats is greatly to be regretted, for, as stated before in reports from this consulate-general, in this section of the country there is every reason to believe that there would be a good opening for the sale of the excellent, well-built, handy, and reasonable-priced touring craft which have attained such great success in the United States.

SALES OF EXHIBITED VEHICLES—NEXT EXPOSITION.

On the whole, the Berlin Exposition of 1907 may be considered to have been a great success. The attendance during the first period broke all the records of former expositions, but it fell off during the second period—that devoted to the display of industrial cars and motor boats. From a business point of view the largest sales were made of the medium-priced vehicles. On one of the exhibits the placards indicated that 178 sales of duplicates had been made. It was a four-cylinder 12 to 16 horsepower, well-constructed touring car, tonneau body, with horn and petroleum lamps, ball bearings throughout; price, 8,500 marks ($2,023).

At a meeting of the Association of German Automobile Manufacturers, held during the exposition, a resolution was passed, with but 3 dissenting votes, not to hold an exposition under the auspices of the association until September, 1909, and to fine any member 10,000 marks ($2,380) who would take part in any other exposition before the date mentioned.

EXHIBITS OF AUTOMOBILE PARTS AND MACHINE TOOLS.

The classification by nationalities did not indicate accurately the countries of origin of the various exhibits, as machinery, automobile parts, and accessories of foreign manufacture were displayed by German firms and companies which are the agents for the sale of such products in Germany. For instance, while there were only three distinct American exhibitors, one Berlin firm, which carries an extensive line of American machine tools, exhibited a fine collection of American lathes, turret machines, drill presses, milling machines, etc., for making the various parts of motor cars. There were several other firms also which exhibited tools of American manufacture. As the machines were shown in operation, they made an attractive display.

It would be well for our American machine-tool manufacturers to realize the great progress which has been made by the Germans during the past five years. While it is true there are machines made in this country which follow closely American lines, there are others which show great originality of design and which for their efficiency, careful construction, and comparatively low prices may become formidable competitors of American tools.

At the exposition there were shown electric and steam driven tools of German manufacture for boring, shaping, grinding, and polishing; machines for sharpening saws and milling tools; drilling machines of various sizes; automatic turret lathes for heavy and light work, for making nuts, screws, and bolts, etc.; special machines for turning and grinding crank arms for motors, for boring cylinders, for planing and milling gears.

AUTOMOBILE INDUSTRY AIDED BY THE GOVERNMENT.

The interest which is shown by the Government in the various industries of the German Empire is evidenced in its endeavors to ascertain the present condition of the automobile trade and the most efficacious measures to adopt through which governmental aid may be rendered to increase the outlets for the sale of motor cars and accessories of German manufacture.

A meeting was recently held at the Imperial Ministry of the Interior, at which were present representatives of the Government, of the Imperial Automobile Club, and of the Middle German Automobile Manufacturers' Association and the principal officers of the leading German motor-car manufacturing companies. A series of questions were drawn up which are to be sent for replies not only to the automobile manufacturers of Germany, but to the producers in the allied industries, rubber, carriage works, benzine, etc., and to furnishers of raw materials. The nature of the inquiries has not been made public, but the information asked for is embodied in three groups of questions covering the years 1901, 1903, and 1906, in order that the development of the motor-car industry up to and including the latter period may be definitely ascertained, as it is assumed that the changes made in 1907 are not important.

HOTEL KEEPERS' EXHIBITION AT NUREMBERG.

EXPOSITION OF FOOD SUPPLIES, CULINARY APPLIANCES, ETC.

Announcement has already been made in Consular and Trade Reports of a forthcoming German exposition under the management of a hotel keepers' association, concerning which Consul H. W. Harris, of Nuremberg, sends the following additional details:

From September 19 to 30 an exposition will be held at Nuremberg in the interest of culinary art, general food products, army sustenance and of meat shop, confectionery, bakery, hotel, and innkeepers' appliances, etc. The exposition is to commemorate the twenty-fifth anniversary of the Innkeepers' Association of Nuremberg and is under the protectorate of Prince Alfonso of Bavaria. It will be housed chiefly in a large permanent exposition building in the city having, it is stated, more than 10,000 square yards of floor space.

Sixteen separate groups of exhibits are announced. Groups 1 and 2 include food products of all kinds, such as dried and preserved fruits, meat and dairy products, edible oils, sauces, spices, alcoholic and nonalcoholic beverages, etc. Groups 3 and 4 embrace appliances, implements, and machinery for hotels, restaurants, kitchens, bakeries, meat shops, dairies, confectioneries, etc. Other groups will include tableware of all kinds, billiards and other games, automatic musical instruments, sanitary appliances, table and bed linen, furniture, wooden ware, kitchen and hotel elevators, scientific literature pertinent to the general subject-matter of the exposition, advertising specialties, table decorations, menus, etc.

RATES FOR SPACE—OPPORTUNITY FOR AMERICAN ARTICLES.

The management announces the charge for floor space for 1 square meter (1⅛ square yards as 25 marks ($5.95), on up to 90 marks

($21.42) for 4 square meters, each additional square meter to cost 15 marks ($3.57). Exhibitors taking 20 square meters or more are to pay at the rate of 15 marks ($3.57) per square meter. Applications for space are to be made not later than August 1 on blanks furnished by the management.

Nuremberg and the adjoining city of Fürth have a population of nearly 400,000 people and form the chief manufacturing and exporting center of Bavaria. Experience has shown that expositions in Germany have a large attendance and are regarded as valuable advertising agencies. This consulate is of the opinion that the Nuremberg exposition offers an excellent opportunity for well-selected exhibits of certain food products of the United States now sold abroad and for novelties and other articles falling under some of the groups. The services of intelligent American students coming abroad could doubtless be secured to look after such exhibits. A study of the exposition itself should be of considerable educational value.

Correspondence should be addressed to Bureau Kochkunst Ausstellung, Nuremberg, Germany. This consulate will gladly render American exhibitors such services as it can without neglect of its other duties.

ITALY.

WORLD EXPOSITION WILL BE HELD JOINTLY AT ROME AND TURIN.

Baron Edmondo Mayor des Planches, Italian ambassador at Washington, furnishes, through the Department of State, the following note in relation to an international exposition to be held at Rome and Turin three years hence in commemoration of the fiftieth anniversary of the proclamation of the Kingdom of Italy:

Rome and Turin, with the cooperation of all the Italian provinces, are making preparations for a solemn celebration of the fiftieth anniversary of the proclamation of the Kingdom of Italy.

As a part thereof, the two cities have announced an international exposition which will be held in 1911 under the auspices of His Majesty the King, at Rome in its artistic and historico-archæological part, and at Turin in the part which includes the products of industry and labor in their various manifestations.

The Government of Italy invites the participation of the United States in the International Competition of Industry and Labor at Turin and of Art and History at Rome.

His excellency the minister of foreign affairs lastly suggests that it would undoubtedly be expedient, in order to facilitate the participation, if it be decided to take part, that steps be taken here to appoint a commissioner-general who might, at the proper time, communicate directly with the exposition's committees on organization.

FIREPROOF EXPOSITION MATERIALS.

CONTEST TO BE HELD AT TURIN FOR NONINFLAMMABLE BUILDINGS.

Consul Albert H. Michelson, of Turin, reports that, in view of the damages caused by fire to previous international expositions, the Italian executive committee of the International Exposition to be held in Turin in 1911 has instituted an international competition to

test the relative merits of various materials and processes, whereby the timber and textile tissues to be used in the construction of the buildings of the said exposition may be rendered noninflammable. The consul describes the plans:

The fireproofing materials in question will be divided into those for the protection of timber and those for the protection of tissues. For timber a speedy and cheap method of superficial coating will be preferred, although other processes will be given every consideration. The timber treated must not be rendered unfit for polychromic decoration of any sort. Tissues must be treated in such a way as to impair least their strength, elasticity, and coloring.

Materials, whether destined for the protection of timber or tissues, must be furnished, free of all charges, to the "Direzione del Laboratorio di Chimica Docimastica del Regio Politecnico di Torino," before September of this year, and must be supplied in sufficient quantities to protect at least 50 square meters (538 square feet) of timber or tissue, as the case may be.

REQUIREMENTS OF THE COMPETITION.

The executive committee states that it reserves the right to purchase such fireproofing materials as shall have been judged worthy of an award, in quantities sufficient for the protection of all exposition buildings. Competitors are therefore required to forward with their samples a statement setting forth the amount of material they will engage themselves to supply, and the price thereof, c. i. f. Turin. They should also furnish, for purposes of identification, an exact description of their material, together with detailed directions regarding the manner and method in which the material is to be tested. The consulate suggests that although such directions should be in English for reasons of complete accuracy it might be well to furnish translations thereto either in French or Italian.

The jury appointed by the executive committee will judge promptly, in a technical, practical, and economic light, the samples submitted to it, and will make such tests as it may deem proper. Competitors are at liberty to attend these tests, either personally or by proxy, but can not appeal from any decision that the jury reaches.

The awards which the jury itself has at its disposal consist of two gold and two silver medals (the first and second prizes for each of the two classes of materials mentioned), and $800 in cash, to be distributed among such competitors as the jury may deem especially worthy of reward on account of research work performed by them, or on account of noteworthy results produced.

RUSSIA.

INTERNATIONAL BUILDING ARTISTICAL EXHIBITION AT ST. PETERSBURG.

Vice Consul-General John Mueller calls attention to an international exposition for building materials and industry relating to the building line which will be held in St. Petersburg under the auspices of the Society of Civil Engineers, opening May 28 and closing October 28, 1908. Mr. Mueller adds the following particulars:

This exposition is indorsed by the Russian ministry of commerce and trade, the ministry of the imperial court, and the department for

the institutions of the Empress Marie, and from information received it promises to be of great commercial and industrial importance to all countries participating. The territory assigned to the exposition is located on the banks of the river Neva in a very picturesque part of one of the islands belonging to the suburbs of St. Petersburg, where one large permanent stone building is already erected. The attention of American firms engaged in the building line is invited to this opportunity to display their materials and articles, as in this special line the United States is in advance of other countries, while Russia offers an immense field for improvements and the most extensive market for American goods in this industry. The usual arrangements for free entry for exposition goods have been made with the imperial customhouse and a St. Petersburg firm has been appointed as commissioners for the American department, to whom applications for space can be addressed. Copies of the rules, form of application in the English language, and a map showing the exposition grounds are forwarded herewith. [These and the address of the commissioners for the American department may be obtained for examination by American firms from the Bureau of Manufactures.]

NORWAY.

IMPORTANCE OF AMERICAN REPRESENTATION AT MOTOR EXPOSITION.

Consul Felix S. S. Johnson, of Bergen, calls the attention of American manufacturers of motor boats and engines to the Norwegian exhibition of such mechanisms to be held this coming summer at Trondhjem, concerning which he writes:

Applications for space should now be filed. It is of the greatest importance that the United States should take part in this exposition, as it will be the means of opening up a new market for American goods in Norway. The fishing fleet on the western coast of Norway, consisting of many hundred boats, is gradually being fitted up with motor engines. It is only at these expositions that fishermen and others can see the working of the motor boats and the advantage of the one boat over the other.

At the exhibition held in this city last year, only two American firms were represented, whereas other foreign nations had a full exhibit. In view of the great advantage to be derived by exhibiting, I strongly urge all motor manufacturers to take part at this exhibition; the expense may be large, but the results will more than repay this outlay.

FRANCE.

AGRICULTURAL MOTOR EXHIBITION TO BE HELD AT BOURGES IN JUNE.

France is largely an agricultural country, and the question of the moment among agricultural societies is the adaptation of the motor to agricultural purposes. With this object in view, an "Exposition Internationale de l'Automobile Agricole" will, for the first time, take place in June at Bourges (central France). The programme of the exposition is a comprehensive one and worth the attention of all interested in the supply of every kind of agricultural machinery and farming implements. The address of the secretary of the exposition is 24 rue Notre Dame, Bourges.

PARAGUAY.

PROMOTION OF MARKET GARDENING—EXCELLENT SALES OPPORTUNITIES.

Consul Edward J. Norton sends the information that an agricultural exposition will be held in Asuncion on May 14, 15, and 16 under the direction of the National Agricultural Society of Paraguay, the plans being as follows:

The sole object of this exposition is to show the opportunities awaiting the cultivation of early fruits and vegetables for export. As regards season, soil, and climate, Paraguay bears practically the same relation to Montevideo and Buenos Aires as does Florida to the great city markets of the Northern States.

Based upon these natural advantages, the Agricultural Society has made a careful study of the markets of Rio de la Plata and has arrived at the conclusion that if the Paraguayan people can be aroused to an appreciation of the opportunities awaiting them, a new and important industry may be created.

Paraguay now ships tomatoes, oranges, pineapples, and bananas to the markets of the Rio de la Plata but these products are not selected, packed, and handled en route with sufficient care, wherefore the profits have been small, and little interest has been manifested in the extension of the industry.

PLANS FOR EXTENDING MARKETS—AMERICAN CATALOGUES INVITED.

Growers will be encouraged and assisted in improving the quality of their garden products and instructed in the selection of produce for export and the proper methods of packing, as well as impressed with the necessity of cultivating a wider range of vegetables and fruits, particularly potatoes, squash, asparagus, radishes, beets, onions, grapes, watermelons, cantaloupes, strawberries, and figs, all of which it is reported, will find ready sale in the Southern markets.

Fast steamers on the down trip now make the journey to Buenos Aires in three days, and to Montevideo in four days. While the question of transportation is simple, the problem of marketing products requires careful and thorough study, but the society hopes to overcome difficulties through the cooperation of the Government with the growers.

It is suggested that seedsmen and nurserymen of the United States forward catalogues (several sets) and pamphlets, in Spanish, for distribution during the exposition. If these are forwarded to this consulate, care will be taken to see that the printed matter is properly handled. Posters to brighten the exposition building will be welcomed. Displays of seeds, even on a small scale, or the sending of a few attractive specimens of prize vegetables, such as one notes at state fairs in the United States, would certainly be a profitable advertisement for the exhibitor.

Catalogues from manufacturers of mill machinery for the making of baskets, crates and orange boxes are also requested.

BRIQUETTES.

MODERN FUEL PRODUCTS.

FRANCE.

THEIR USE AS LOCOMOTIVE FUEL ON RAILWAYS OF THE REPUBLIC.

Consul-General Frank H. Mason, of Paris, furnishes the following report on the fuel consumption of four of the great railway systems of France, namely, the Northern, the Eastern, the Paris-Orleans, and the state railways, with special reference to the use of briquettes:

The Northern Railway of France operates a network of lines 2,354 miles in length and traversing the territory from Paris northward to the English Channel and the frontier of Belgium, including the coal fields of the Pas-de-Calais and the Nord. According to the statement of the chief engineer briquettes constitute from 12 to 15 per cent of the entire locomotive fuel supply used by the company. They are cubical in form, weigh about 10 kilos (22.046 pounds) each, and contain from 18 to 22 per cent of volatile matter. They are used for kindling the fire and getting up steam before the engine goes upon duty, and during the run when, by reason of a heavy train, a strong ascending grade, or the necessity of high speed, it is required that the locomotive shall put forth its maximum effort. The other fuel used is coal or slack of ordinary quality.

COST AND TESTING OF FUEL.

The cost of briquettes on the Northern Railway varies slightly with the market price of coal, but has ranged during the past three years from 15.75 to 22 francs ($3.03 to $4.25) per metric ton of 2204.6 pounds. The conditions imposed upon the manufacturers who supply briquettes to the company are as follows:

First, that the proportion of ash shall not exceed 8 per cent, or if it does a deduction of 10 cents per ton is made for every 1 per cent excess of ash above the standard, 8 per cent.

Second, that the coal employed shall be of a coking quality; that is, there shall be such a combination—either natural or artificial—of fat and lean elements as to produce a coal susceptible of being coked.

Third, the standard maximum of humidity is 5 per cent at a temperature of 100°.

Fourth, cohesion must not be less than 50 per cent. This is measured by the apparatus employed by the French navy, which consists of a rotary sheet-iron cylinder, 39 inches long and 32 inches in diameter, hung on an axle, and having three interior flanges about 10 inches high. For the test, 50 kilos of briquettes are broken into pieces, weighing about 1 pound each. These are put inside the cylinder, which is then revolved at a rate of 25 turns per minute. After having made 50 revolutions the cylinder is opened and the contents poured upon a horizontal grate with square holes, 3 centimeters (1¼ inch) long and broad. The pieces which do not fall through the grate are then weighed, and they should constitute not less than 50 per cent of the whole amount submitted to the test. If the débris that falls through the grate exceeds one half the original material the cohesiveness of the briquettes is proved to be below the prescribed standard.

THE EASTERN RAILWAY.

This company owns and operates a network of lines 3,068 miles in length, and extending from Paris and eastward to the frontier of Belgium, Germany, and Switzerland.

Fifteen per cent of all locomotive fuel used by the Eastern Railway Company consists of briquettes made of pulverized coal held together by a matrix of 8 per cent of "brai" or coal tar derived from gas manufacture or coke production with recovery of by-products. The fine coal used is carefully composed of such proportions of fat and lean varieties as to give from 17 to 19 per cent of volatile matter and the requisite degree of firmness, cohesion, and percentage of ash. Anthracite dust is used to some extent in combination with fat bituminous varieties, so proportioned that the ash residue shall not exceed 8 or 9 per cent. Care is also taken to secure cinders which are but slightly fusible and do not form the refractory "clinkers" which are so difficult to manage in a locomotive fire box.

The briquettes used by the Eastern Railway Company are made in presses of two types, viz, the Bietrix, in which the mold is closed, and the Bourrież press, in which the mold opens with each revolution. The first apparatus turns out briquettes flat in form, with rounded edges and weighing 5 kilos, or about 10 pounds each, though for certain purposes they are made in smaller sizes, from 3 kilos upward.

The price varies with the current market value of coal and is reckoned at 5 to 6 francs ($0.96 to $1.15) per ton above the cost of coal. The conditions stipulated in the purchase of briquettes for the use of the company are that the coal before admixture of the matrix shall be susceptible of coking; that the briquettes shall be firm, well made, burn freely without clogging the tubes of the boiler, and shall contain not to exceed 5 per cent of moisture or 8 to 9 per cent of ash. Excess of humidity or ash residue above these limits is charged for in a proportionate reduction in the price paid for the briquettes showing such defects.

Briquettes are used on all the locomotives of the Eastern Railway Company for kindling the fire, getting up steam after the engine has been off duty, and in all cases where, by reason of a heavy grade, load, or speed, the maximum effort of traction is required. The relative proportions of briquettes and coal used vary with the season, weather, and nature of service required, the harder the service the greater the percentage of briquettes used, and this proportion varies from 12 to 30 per cent, with a mean average of 15 per cent throughout the year.

THE PARIS-ORLEANS SYSTEM.

The Paris-Orleans Railway Company owns and operates 4,467 miles of lines, extending from Paris southwesterly to Toulouse and Bordeaux, and one line westward, via Tours and Nantes, to Brest, on the extreme western coast of France. Little or no coal is mined on the territory traversed by the lines of this company. It uses annually 285,000 tons of briquettes, which form 28 per cent of its entire locomotive fuel supply.

The briquettes used by the Orleans company are of the ordinary cubical shape, but are made in several sizes, from 5 to 10 kilos in

weight, and cost, according to the varying price of coal, 20 to 28 francs ($3.86 to $5.40) per metric ton.

The conditions imposed by the company upon contractors who supply briquettes for locomotive fuel are quite elaborately given in the "Cahier" which is furnished as an exhibit with this report [filed for public reference at the Bureau of Manufactures]. They include, among others, the following stipulations: That an agent of the company may at any time inspect and observe the manufacture of briquettes intended for its use; that tests shall be made upon demand to demonstrate the quality of the briquettes; that the company may specify the coal mines from which the material for its briquettes shall be derived; that the coal shall be of recent extraction, as free as possible from sulphur; that it shall not produce "clinkers" to the injury of grates or prevention of steaming; that they shall burn with a live, clear flame and produce only a light-gray smoke; shall have a density of from 1.13 to 1.21 and a cohesion of not less than 50, or if below that standard, to be subject to a proportionate discount in price.

THE STATE RAILWAY.

The State Railway system includes a main line from Paris to Bordeaux, with a network of branches extending to Angers, Nantes, Poitiers, La Rochelle, Angoulème, and other points, a total length of 2,916 kilometers, or 1,811 miles. The total train mileage of the system in 1906 was 10,854,007 miles, of which freight trains are credited with 3,301,278, and passenger and mixed trains with 7,552,729 miles of service. The authorities of this railway own no coal mines and therefore buy all their fuel, which includes 120,000 tons of briquettes, or 40 per cent of its entire fuel supply for use in locomotives. The supply of briquettes has been hitherto received under a three-year contract made in October, 1904, which provided for the delivery free of briquettes, in cars furnished by the railway, at any of its stations, for a price between 18.75 and 19.70 francs ($3.65 and $3.80) per metric ton.

The "Cahier des Charges," which is sent as an exhibit with this report [filed at Bureau of Manufactures], shows in elaborate detail the conditions which are imposed upon contractors who supply briquettes for the State Railways. They are similar to those prescribed by the other companies already described, and require that the briquettes shall be composed of coal of a quality that can be coked, free from sulphur, schists, pyrites, or other impurities; that they shall be hard and sonorous with a cohesion of fifty-five one-hundredths; with not more than 10 per cent of ash residue; volatile matter not less than 16 nor more than 22 per cent, and as far as possible free from humidity.

INSPECTION OF FUEL—RÉSUMÉ OF CONDITIONS.

Provision is made that the briquettes may be inspected during or after manufacture by an agent of the railroad, and that before delivery each shipment of 400 tons shall be minutely inspected and analyzed. The tests for cohesion are made by the marine apparatus already described in this report. The "Cahier" shows the discounts from the net contract price which shall be made for all delinquencies

or defects in cohesion, purity, ash residue, or other essential quality below the prescribed standard.

From the foregoing synopsis of the regulations prevailing on four of the railway systems of France it will be seen that briquettes, made of pulverized coal and mineral pitch, form the choicest and most expensive fuel used for firing locomotives. The extent of their use is governed by the service demanded of the engine under varying conditions of season, weather, speed of trains, and grade of track to be overcome—the more severe the service the larger the proportion of briquettes used for firing the locomotive. The average percentage employed varies from 12 per cent of the entire fuel supply on the Northern Railway to 40 per cent on the lines owned and operated by the State.

GERMANY.

DESCRIPTION OF METHODS FOR CONVERTING PEAT INTO FUEL.

Consul Southard P. Warner, of Leipzig, reports that a German engineer, writing upon the subject of making use of peat as fuel, says:

Many attempts, unfortunately accompanied with negative results, have hitherto been made to utilize peat beds by converting peat into coal. The cost of producing peat briquettes and peat coal were out of all proportion to the price of common fuel. The structure also of the peat coal derived in this manner resembled more that of easily crumbling coke than of hard coal. The chief reason for all previous failures may be attributed to the fact that the ordinary drying processes have not removed a sufficient portion of the water. The vegetable cells holding the water yield up their contents only if they are burst. Various methods have been employed for bursting the cell tissue, as for instance, by grinding the peat in specially constructed mills, by the application of steam, and also electrolytically. These processes have proved to be too expensive.

A recent manner of production has the merit of less expense. It consists essentially in bursting the vegetable cells by an appropriate treatment of the peat in a vacuum. A vacuum adapted to practical purposes may be attained by the employment of two kettles connected by a pipe. Kettle 1 is heated to 28° C. The vegetable cells of peat burst at this vacuum temperature. On opening the cock of the pipe to kettle 2 half of the vacuum—supposing the contents of both to be the same—passes from kettle 1 into kettle 2, and half of the air in kettle 2 pours into kettle 1. The peat contained in kettle 2 is now treated in the same manner, so that half of the vacuum may constantly be turned to practical account. In the meantime, the peat in kettle 1 can be removed and transported to a press, where most of the moisture is eliminated. Finally, it can be desiccated in storehouses, and in a short time the water contents have been reduced to 10 per cent.

BY-PRODUCTS—COST OF PRODUCTION.

To produce the necessary motive power for the plant the peat is gasified in retorts by a patented process. An unusual quantity of gas, ammonia, tar, peat oil, etc., is thus extracted. The gas so derived may best be applied for heating the retorts. Nevertheless, there re-

mains about 60 or 70 per cent of gas that can be utilized for the necessary gas engines or for producing peat coal in the retorts. The latter process consists of heating peat to about 300° C. in retorts entirely inclosed in material easily penetrated by heat. As soon as the proper temperature has been obtained the oven is closed air-tight and the heat shut off. The mass remains in this state some hours. A large quantity of gas has developed in the retorts, and not being able to escape, it exercises a great pressure, so that a portion is reduced to paraffine, which is pressed back into the mass. The peat is exposed to such a high pressure that it forms a compact body resembling coal, as opposed to the hitherto soft products.

The peat now can be broken up or ground and then formed into briquettes in retorts by a cold process. This method yields a coal possessing 6,500 to 7,200 calories of heating power, which burns without the development of smoke or bad odors and leaves almost no ashes. The cost of installing a complete plant producing 30 to 50 tons of coal and coke per day is about $14,600, with an additional $9,730 essential for dredges, buildings, and gas reservoirs. One ton of desiccated peat will produce with the vacuum process about 7 hundredweight of coke, about 55 pounds of ammonia salt, about 132 pounds of tar and peat oil, varying with the treatment of the peat, and about 654 cubic yards of gas. If the gas be mixed with the gas first obtained in the retort process it furnishes a very good heating and motive power; 6.5 or 7.8 cubic yards of wet peat are necessary for yielding a ton of peat capable of treatment. One may calculate the price of dry peat at about 73 cents per cubic meter (1.3 cubic yards). One ton of peat produces about 13 hundredweight of coal, besides some peat oil and gas. A plant of this nature would require about 12 to 15 men for day and night shifts.

PROFITS AND FIELD OF USEFULNESS.

By combining the three processes described, very cheap manufacture is possible, allowing of a very high profit. The power consumption of the machinery is normal. The peat beds also contain other economic treasures. It is well known that Germany, and, in fact, all European states, expend large sums annually for fertilizers. Frequently the cost of transportation exceeds the purchase price proper. Peat is to be found in almost all districts, and sufficient ammonia for supplying the requirements of the respective districts can be obtained from this material. It is very probable also that this fertilizer has better qualities than, for instance, potash. In addition, a coal can be produced that is particularly advantageous for nautical purposes, the more so as smokeless fuel is of inestimable value to the navy. Its employment on commercial steamers would free passengers from the smoke nuisance.

Still higher results could be attained by using peat gas for producing electricity, which could then be conducted to the point of application by means of wires. The owners of territory in East Germany could cultivate their fields with electrically-driven implements; the employment of electricity for propelling railways would also be facilitated. Electric heating and lighting would rapidly gain ground. In fact, this new material could give rise to immeasurable progress in trade and industry. [The addresses of German firms engaged in the manufacture of machines for making peat briquettes may be obtained from the Bureau of Manufactures.]

BELGIUM.

FORM PORTION OF FUEL OF GOVERNMENT RAILWAYS.

Consul-General Ethelbert Watts, of Brussels, makes the following report on manufacture and use of briquettes in Belgium:

According to the latest official statistics concerning briquetted fuel in Belgium for the year 1906 there were 48 plants engaged in the manufacture of various kinds of briquettes. Thirty-four of these plants were in the province of Hainaut, with a total of 74 presses, employing 1,265 workmen; 1,324,390 tons of coal were consumed to produce 1,456,840 tons of briquettes, valued at $5,376,530, price per ton being $3.69. In the province of Liege there were 9 plants with 17 presses, employing 160 workmen; 256,980 tons of coal were consumed to produce 279,210 tons of briquettes, valued at $980,025, price per ton being $3.51. There were 5 plants in the province of Namur, with 16 presses, employing 113 workmen, and 125,340 tons of coal were consumed to produce 151,040 tons of briquettes, valued at $516,195; the price per ton was $3.43. The foregoing are average prices given for briquettes f. o. b. at works.

The heating value of briquettes depends entirely upon their component parts and the density of the bricks. Briquettes of 90 per cent coal mixed with tar or pitch have a heating power about 10 per cent greater than the coal from which they are made. The caloric value per briquette is estimated at 7,500 calories, or in English thermal units 30,000.

The following statement is given by the Belgian state railroad department, which operates 90 per cent of the railways in the kingdom: The consumption of briquettes and coal is about 1,160 tons of briquettes and 4,400 tons of coal per day on the Belgian Government railroads. Of briquettes known as Type I, 350 tons are used, and of briquettes known as Type II, 810 tons. In addition to this 90 tons English nut coal, replacing briquettes, are used for locomotives.

MAKE-UP AND PRICES.

The briquettes are of a rectangular shape, the weight varying according to the contractor from 3 to 7 kilos (6.6 to 15.4 pounds).

The following prices per ton of 1,000 kilos (2,204 pounds) were paid by the railroad department in September, 1907: Briquettes, Type I, 21 francs ($4.05); Type II, 23 francs ($4.44); English nut coal, 19.75 francs ($3.81).

Common requirements for the composition of the two types of briquettes used for locomotives are as follows: The mineral pitch or coal tar must be dry or semibituminous. The briquettes must not contain more than 1 per cent of water, 1 per cent of cinders, and have a maximum of 10 per cent of coal tar. They must be hard and should maintain their hardness at a temperature of 50° centigrade.

The coal used for the manufacture of briquettes, Type I, must be semibituminous, or at least one-fourth bituminous, with 12 per cent volatile matter, and recently mined. There must not be more than 4 per cent of water, nor more than 8 per cent of cinders.

For Type II the coal must be semibituminous, the amount of water not more than 4 per cent, the maximum of cinders 8 per cent,

and the volatile matter not less than 15½ per cent nor above 18 per cent.

The railroads purchase their fuel and all other materials by contract from the lowest bidders. Forwarded herewith are copies of specifications for the purchase of fuel supplied by the Government state railroads.

SWITZERLAND.

IMPORTATION AND USE ON SWISS RAILWAYS.

Vice-Consul Leo J. Frankenthal, of Berne, states that as Switzerland posseses no coal mines all the coal used in the country must be imported. He gives the importation of coal and briquettes in 1906 as follows:

From—	Coal.	Briquettes.	From—	Coal.	Briquettes.
	Metric tons.[a]	*Metric tons.*[a]		*Metric tons.*[a]	*Metric tons.*[a]
Germany	1,465,510	394,750	Austria	12,690	1,290
France	236,460	31,160	Netherlands	1,490	230
Belgium	93,950	18,250			
England	23,620	45	Total	1,833,720	445,725

[a] 1 metric ton=1,000 kilos=2,204.6 pounds.

These figures include the quantities used on the railways. In 1907 the Swiss Federal Railways used 340,000 metric tons of briquettes and 180,000 metric tons of coal, the briquettes being mainly from the Ruhr and the coal mostly from the Saar districts, in Germany. The regulation briquette for use on locomotives weighs 10 kilos, but some of lighter weight, 3 and 6 kilos, are used. They have the form of a rough, oblong block, and no particular dimensions are prescribed. Specifications governing the purchase of briquettes for the Federal Railways can not be obtained for the reason that private contracts are made with the coal syndicate (Kohlenverband) at Mühlheim and with the Royal Direction of Mines (Königl. Bergwerksdirektion) at Saarbrücken, Germany. The prices do not appear in the railroad reports. Public bids are not asked. The present wholesale market price of Saar coal is $5.56 to $5.75, and of Ruhr briquettes, $6.85 per metric ton, delivered at the Swiss-German boundary.

The briquettes, although more expensive than coal, require less storage space, retain their original good condition for a longer period, besides furnishing power in a concentrated form. They are used mainly for fast trains, while the coal is burned on freight locomotives. Well-made briquettes should break into several large pieces from the blow of a hammer, but should not crumble.

MEXICO.

EXTENSIVE PEAT DEPOSITS AND POSSIBLE UTILIZATION.

Consul-General A. L. M. Gottschalk reports that for some years past the presence of peat bogs at certain places near Mexico City, notably near Xochimilco, was a well-known fact, but a few abortive

attempts at forming companies for their development gave no results. The consul-general writes as follows of present development plans:

The problem was an interesting one, as the capital city, like many municipalities in Mexico, has for many years past been depending for its fuel supply upon the neighboring woods, with the result that there has been at the hands of woodcutters and charcoal burners a very unnecessary deforestation of woodland, which Baron Humboldt (in 1828) described as very luxuriant and which to-day is covered with a very inferior "second growth" of trees.

It is now announced that a company [address on record at Bureau of Manufactures] formed in New York in 1907 and exploiting a patent for briquetting peat, the discovery of a United States consul, is about to establish in Mexico a 2,500-ton plant.

It is expected that the peculiar qualities of peat as a fuel, its smokelessness, its producing no clinker, its freedom from any of the sulphur products of combustion, joined to the fact that its ash has fertilizing qualities, will all tend to assure a great sale for the product here and perhaps abroad.

The company proposes also, in addition to selling fuel, to furnish power. It is said that the surveys of the peat bogs made by the company, not far from the lake of Tezcoco, have shown them that they had available some 8,000,000 tons of what is known as "moss" peat. They have acquired the right to these deposits and propose to invest some $2,000,000 United States currency in the plant for its exploitation, which will be located at some point in the Valley of Mexico, not far from the city.

TARIFFS.

CHANGES AND REGULATIONS.

AUSTRALIA.

MODIFICATIONS IN THE NEW CUSTOMS TARIFF BY PARLIAMENT.

The following summary of the changes made in the tariff bill by the Australian Parliament, is reproduced from the London Commercial Intelligence:

Introduced into the Commonwealth House of Representatives on August 8 last, the new Australian customs tariff has passed that House.

Further alterations at the hands of the Senate are not likely to be extensive. A very large number of modifications, however, have been made by the representatives.

In many instances the preference [British] has been increased, but the chief feature of the revision has been the reduction of the heavier duties. The result is that the tariff is much milder than might have been expected from the draft proposals. The new excise duties to be imposed on Australian manufacturers who do not observe "fair" labor conditions have also to be taken into account in estimating the protective effect of the new tariff.

In the textiles group the principal items have come through unchanged, with the important exception of whole or partly made up apparel of wool and silk, or containing wool and silk. From 45 per cent (general) and 40 per cent (British) the duty on these goods has been reduced to 40 per cent (general) and 35 per cent (British).

The duties on small arms have been materially altered. On double-barreled guns the proposed duties were 11s. each (general) and 10s. (British), on single-barreled 5s. 6d. (general) and 5s. (British), the duties on barrels for same or actions to be half these amounts. All are now to pay 15 per cent (general) and 10 per cent (British). On revolvers, pistols, and air guns the duties are to be 2s. 9d. each, or 20 per cent ad valorem (general) and 2s. 3d. (3d. less) or 15 per cent ad valorem (British).

METALS, HARDWARE, AND MACHINERY.

In this group most of the duties have been recast and lowered. Corrugated galvanized-iron plate and sheet is to pay 30s. per ton (general) and 20s. per ton (British), instead of 25 per cent and 20 per cent ad valorem. Galvanized iron not corrugated, and corrugated not galvanized are to pay 20s. (general) and 10s. (British). Five per cent has been taken off the duties on bolts, nuts, and rivets, and now pay 25 per cent (general) and 20 per cent (British). The duties on lamp, gas, and electrical stoves have been reduced by 5 per cent ad valorem and incandescent mantles are to pay 25 per cent and 15 per cent, instead of 40 per cent and 30 per cent. Arc and incandescent lamps are to pay 5 per cent (general), British being duty free.

A considerable number of agricultural, horticultural, and viticultural machines, including thrashers, are to pay 10 per cent (general), while British makes will be duty free. Other machines and implements of this class will pay 15 per cent (general) and 12½ per cent (British). The duties on weighing machines are 10 per cent and 5 per cent. Gas producers, flue heat economizers, mechanical stokers, steam traps, steam turbines, superheaters, and water purifiers will be free when British and charged 5 per cent when not British. The same scale applies to pulley blocks, pneumatic elevators and conveyors, steam turbo-blowers, telphers, and patent hoists for underground mining. The proposed duty on turbines was 25 per cent (British). Locomotives, traction and portable engines, steam road rollers, and scarifiers are to pay 25 per cent (20 per cent British). Feed grinders and sheep shearing machines are to pay 30

per cent and 25 per cent. Rotary and percussive drills (20 per cent and 15 per cent) and coal cutting machines (5 per cent and free) are the other machines named in the tariff. All machines and tools not specially named in the tariff are to pay 25 per cent (general) and 20 per cent (British).

There are scores of alterations in the other divisions of the tariff, and one which is of general interest is the removal of the duty on catalogues, price lists, etc.

BRITISH INDIA.

INCREASE OF DUTY ON BEER AND OTHER FERMENTED LIQUORS.

Consul-General William H. Michael, of Calcutta, reports, under date of January 9, that by the Indian tariff-amendment bill which was passed at the last meeting of the imperial legislative council, the government of India has given effect to the recommendation of the late excise commission that the import duty on imported beer and the excise duty on beer made in India should be raised from 2 cents to 4 cents a gallon. In the term "beer" the new act also includes other fermented liquors which are classed with it in the tariff act, such as ale, porter, and cider.

BRITISH SOUTH AFRICA.

TARIFF COMMISSION APPOINTED IN TRANSVAAL.

Consul J. H. Snodgrass, of Pretoria, reports, under date of January 15, that in order to arrange some programme upon which to work at the forthcoming tariff conference of the colonies, the Transvaal government has appointed a commission to inquire into and report upon the following matters:

The condition of existing industries, manufacturing and agricultural, and the possibility of the extension of such industries.

What encouragement or protection should be given to such industries, and by what means and to what extent; whether by protective duties, bounties, railway rates, or otherwise.

What effect the customs union convention and railway rates, preferential or otherwise, and bounties have had on such industries.

In what proportions imported and local products or raw materials enter into local manufacturers and to what extent white labor is used as compared with colored labor.

To what extent the use of colored or Asiatic labor in the neighboring colonies is prejudicial to the continuance and establishment of industries in this colony.

What effect the customs union convention and the parcels post have had on the transfer of business to the coast and elsewhere.

The best steps to be taken to encourage and promote the trade and industries of this colony.

The desirability of amending the classification of the present customs tariff and in what directions and generally.

All matters relevant or akin to the foregoing terms of reference.

The consul states that it is pretty generally believed that this commission will suggest a reduction of the tariff on various articles of food.

CHINA.

CUSTOMS REGULATIONS GOVERNING ADMISSION OF MERCHANDISE.

The following provisional regulations for the transport of native or foreign goods to the newly opened ports of Manchuria have been issued by the Chinese inspector-general of customs with the consent

of the revenue council, and are transmitted by Consul Wilbur T. Gracey of Tsingtau:

1. All foreign goods for which import duty has been paid at Tientsin, Newchwang, Antung, or Tairen (Dalny) or native goods on which coast trade half duty has been paid, unless they are to be transported into the interior either under inward transit pass or paying duty or likin at customs houses or barriers en route at the option of the merchant and as provided by the rules hitherto in force, if intended for transport by whatever means of conveyance to the newly opened ports in Manchuria may be provided with a special certificate exempting them from further charges.

Such special certificates shall be stamped in accordance with the regulations, and shall be surrendered within two months. On every application for such special certificates shall be stated over the signature of the applicant the name of the port of destination and unless proof of the arrival of the goods at the port of destination is produced within the time allowed at the customs house where the application was made, three times the half duty shall be paid.

An annual bond may be executed in the same terms and deposited with the customs, to save the inconvenience of executing a bond on every occasion. In the case of foreign merchants the bond shall be sealed by the consul, and in the case of Chinese by the customs. Anyone who has not executed an annual bond must put in a signed application on each occasion.

Forms of bonds and applications shall be fixed by the customs.

2. Goods transported under special certificates to the newly opened ports in Manchuria, in order to be in order, must correspond with the description of them given in the application. If they do not so correspond, they shall be regarded as having no special certificate, and besides the penalty of three times the half duty of the entire quantity due at the custom house where the application was made, the goods shall be liable to confiscation on arrival at the port of destination.

CUSTOMS STATIONS OPENED.

The Department of State has received a telegram from the American Legation at Peking advising that the customs stations at Manchuria and Pogranichnia were opened on February 5.

CUBA.

CHANGES IN THE CUSTOMS TARIFF.

The Gaceta Oficial of January 23, 1908, contains a decree issued by the provisional governor of Cuba ordering the following changes in the tariff:

I. That the following paragraphs in Class IX of the customs tariff be and the same are hereby amended to read as follows:

171. House or cabinet furniture of wood, wholly or partly finished, and manufactures of wood, or of which wood is the component material of chief value, not specially provided for—wicker and cane furniture, 25 per cent ad valorem.

II. That paragraphs 172, 173, 174, 175, and 176 are hereby abrogated, they being included in paragraph 171.

180. Esparto manufactured into fine articles; rushes, vegetable hair, cane, osiers, fine straw, palm, and genista, manufactured into articles of all kinds, not specially mentioned—T. (Disp. III, rule 5), 100 kilos (kilos, 2⅕ pounds), $13.

The following changes in and additions to the Cuban tariff were also promulgated by decrees of the provisional governor during the year 1907:

74. Zinc, lead, and other metals not specially mentioned in the tariff: (g) hammered in thin leaves (lead foil) and in capsules for bottles, kilo, $0.04. 113 (a) cordage and rope makers' wares of cotton, 100 kilos, gross weight, $6. 128 (a) braids and ribbons of cotton for reins, headstalls, and girths, kilo, net, $0.15. 142 (a) braids and ribbons of hemp, jute, linen, ramie, etc., for reins, headstalls, and girths, kilo, net, $0.17.

It is further prescribed that emery cloth shall be classified under paragraph 315 of the tariff at the rate of 32½ per cent ad valorem. (Gaceta Oficial, August 24.)

162.—Cardboard paper, and pasteboard in sheets: (*a*) Cardboard paper, fine cardboard, and cardboard covered with glazed paper or with fancy paper, flowered, painted, embossed, or with any other kind of fancy work—T. (Disp. III, rule 5), 100 kilos, $3.50. (*b*) Other pasteboard, and those covered with ordinary paper, white or dyed, satined or not—T. (Disp. III, rule 5), 100 kilos, $1.

163.—Manufactures of cardboard paper or pasteboard: (*a*) Boxes manufactured from cardboard paper, fine cardboard, or pasteboard, such as has been enumerated in paragraph No. 162 (*a*) or with paper ornaments, or other materials which do not chiefly determine their value—T. (Disp. III, rule 5), 100 kilos, $7. (*b*) Boxes manufactured from pasteboard such as has been enumerated in paragraph 162 (*b*)—T. (Disp. III, rule 5) 100 kilos, $2. (*c*) Cardboard in sheets or otherwise, with or without tissue inside, impregnated with tar, pitch, asphalt, cement, or other analogous material, and used as roofing for buildings—ad valorem, 25 per cent. (*d*) Other manufactures of cardboard paper, fine cardboard or pasteboard, not especially mentioned—T. (Disp. III, rule 5), 100 kilos, $20. (Gaceta Oficial, November 14, 1907.)

The following decree has been promulgated by the Provisional Governor of Cuba, January 27, 1908:

That Order No. 206 from General Headquarters, Department of Cuba, issued September 28, 1901, by the Military Governor, in pursuance of the order of the Secretary of War, in compliance with the directions of the President of the United States of America September 21, 1901, in the part of the same which refers to paragraph 215, of the Customs Tariff in force, be and is hereby amended to read as follows:

215. Machinery and apparatus for making sugar and brandy:

(a) Complete machinery and apparatus applicable only to the manufacture of sugar whoever be the importer____ad valorem 10 per cent.[a]

(b) Machinery and apparatus for making brandy; and other apparatus and machinery and integral parts of same which having several applications for industry and agriculture are destined as auxiliary for the manufacture of sugar and brandy; provided that same are imported for or by planters who under such regulations and security as the Secretary of the Treasury may prescribe shall justify the installation of same on their estates_____ad valorem 10 per cent.[a]

Note I.—In the foregoing paragraph (b) shall be included the detached parts of the machinery and apparatus mentioned in paragraph (a) when imported separately; and by special concession fire bricks for the installation of boilers and furnaces, as well as the iron and steel houses, complete and knocked down, having or not glass or crystal parts, or other fireproof material, and the following material when imported for the construction or repairs of railways for the private use of the sugar plantations: Turntables, transfer bridges, iron or steel bridge work, riveted or rolled, iron or steel rails, points, crossings, signals, gate crossings, and metal ties, splices, fish plates, fish-plate bolts, spikes, frogs, semaphores, switches, and railroad ties of wood.

Note II.—Railroad rolling stock of any kind is excluded from this concession.

Note III.—In case that any of the private railways installed with the material imported under privilege of this decree, as well as under order 206, prior to this decree and hereby amended be declared for the public service, the importer, or in his absence, or in case of transference of the property, the estate, shall be compelled to pay the full amount of duties, under the corresponding paragraph of the tariff without any rebate or benefit. And these duties shall be collected since the date of the first importation made of such material.

This decree is to take effect thirty days after publication in the Official Gazette, i.e., February 28, and all other circulars and decisions prior to this decree and relating to paragraph 215 inconsistent with the same are repealed.

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[a] On imports from the United States the rate is 8 per cent ad valorem.

HONDURAS.

EXPORT TAX ON GOLD AND SILVER.

Consul W. E. Alger, of Tegucigalpa, transmits the following translation of decree imposing export duties on precious metals:

Article 1. A tax of 12 per cent of its value is established on crude silver exported from the country. Article 2. A tax of 2 per cent of its value is established on gold in bars or dust exported from the country. Article 3. The fixed value of silver for purpose of the tax is 40 sols (the present value of a sol in United States currency is 49.9 cents) per kilo; of gold, 675 sols per kilo. Article 4. The disposition of this decree does not apply to mining enterprises that have concessions granting them free exportation of their metals. This decree goes into effect on date of its publication—December 10, 1907.

MOROCCO.

A GENERAL INCREASE OF DUTIES.

Minister S. R. Gummere informed the Department of State under date of February 6, 1908, that the additional duty of 2½ per cent ad valorem on imports into Morocco, authorized by article 66 of the general act of Algeciras, was to go into effect February 19, 1908. The former duty on most imports into Morocco was 10 per cent ad valorem.

SPAIN.

FREE ADMISSION OF IRON CANS AND OTHER RECEPTACLES.

W. H. Buckler, chargé d'affaires at Madrid, transmits a copy of a royal decree, dated December 2, 1907, which provides for the temporary admission into Spain free of duty of iron and steel cans and receptacles, including steel tanks commonly employed for the transportation of oxygen, provided such receptacles are brought to Spain temporarily, to be used in exporting domestic products.

TURKEY.

RESTORATION OF THE FULL RATE ON WHEAT AND FLOUR.

Consul-General Edward H. Ozmun, of Constantinople, reports, under date of February 26, that the temporary regulations of the Turkish Government, which prohibited the export of wheat and suspended the entire duty of 11 per cent on grain imported into Constantinople and reduced the duty of 6 per cent on imported flour, have been rescinded. From February 14, in the provinces, and from March 14, in Constantinople, the usual duty of 11 per cent ad valorem on grain and flour will be collected and the export of grain will be permitted.

VENEZUELA.

CHANGES IN CLASSIFICATION UNDER CUSTOMS TARIFF.

Minister W. W. Russell, of Caracas, transmits a decree, dated December 19, 1907, providing for the following classifications under the Venezuelan tariff:

ARTICLE 1.—From the date given by article 225 of law 16 of the Hacienda Code for the termination of the ultramarine periods [a] and which shall commence

[a] The ultramarine period is the time allowed for putting into effect new customs duties on articles coming from countries across the sea, viz, Europe, forty days; United States, twenty; West Indies, ten.

to count from to-day, the following articles imported through the custom-houses of the Republic shall pay the following duties:

THIRD CLASS.

Marble in the rough, unpolished and uncut, as also marble slabs; the paving for vaults not being included in the term marble slab will pay fourth class as polished or worked marble.

FIFTH CLASS.

Blank books, patent medicines or medicines made by secret process which have been duly examined by the board of examination and classification of patent medicines and medicines made by secret process.

SIXTH CLASS.

Envelopes made up or half made up. Chintzes, Nainsook, calicos, cretons, "carlancanes," brilliantine, fine plaid goods which have more than 13 stitches of warp in a square of 5 millimeters, poplins, "malvinas," Japanese goods (japonesas), lustre (lustrillos), colored percales similar to the above and not mentioned in other classes such as cotton merino and colored cotton flannel.

SEVENTH CLASS.

Muslins, colored cotton crape goods, linen, gauze, barege, grenadine, organdy, zepher, cambric, "dulce sueno," tarleton, "imite," cambric, white or colored cotton batiste, smooth, worked, striped or bordered in pieces or cuts for dresses and any other kind of cloth similar to the foregoing not comprised in other classes.

The duty under the above classes is as follows: Class 3, 0.25 bolivar per kilo; class 4, 0.75 bolivar; class 5, 1.25 bolivars; class 6, 2.50 bolivars; class 7, 5 bolivars per kilo. One bolivar=19.3 cents United States currency; 1 kilo=2.2 pounds.

Another decree, bearing the same date, provides that wooden or paper boxes generally used for candy and handkerchiefs shall be classified under the fifth class of the tariff.

Minister Russell also reports from Caracas the following changes in the Venezuelan tariff since January 18, 1908:

Imported matches will be classified in the fifth class (1.25 bolivars per kilo). (1 bolivar=19.3 cents United States currency; 1 kilo=2¼ pounds.) This does not alter the classification which the present tariff established for matches of "estrellitas" or for red lights.

Raw material remains in the fourth class. (0.75 bolivar per kilo.)

Ordinary black or clear glass bottles for bottling liquors, gaseous waters, and sterilized milk, and the quadrangular flasks of the same ordinary glass for bottling gin, imported from abroad, are classified in the second class (0.10 bolivar per kilo), with an additional 25 per cent.

POTTERY.

METHODS OF MANUFACTURE.

MEXICO.

ANTIQUITY OF THE INDUSTRY—PRODUCTION OF THE CUERNAVACA WARE.

The pottery industry of Mexico, writes Special Agent Arthur B. Butman, is of ancient origin, having been handed down from father to son from time immemorial. Excavations among the prehistoric ruins of Mitla have resulted in the unearthing of many specimens of this handicraft, the designs of which are reproduced to this day. A description of the industry is appended:

Cuernavaca, Guadalajara, Puebla, and Oaxaca are the principal centers of the modern pottery industry, although pottery is manufactured in many of the smaller towns and villages throughout the Republic. The pottery manufactured in these cities possesses distinctive types and characteristics, each quite different from the others, and universally known and recognized by the name of the city where it is made.

Cuernavaca pottery is manufactured in the little village of San Antone, just outside the city of that name. The dwellers in practically every one of the adobe houses in the village are clay workers, and each house is a workshop. The only established plant is owned by an Englishman. Pottery is here made entirely by hand, and after the following process:

PREPARING AND MOLDING THE CLAY.

The clay, after being taken from the earth, is first thoroughly dried in the sun, then pulverized with a wooden mallet, and passed through the finest meshed brass-wire cloth, after which process the clay is finer than wheat flour. The former custom of the Indian was to use a handkerchief or a piece of cotton shirting for this purpose. For mixing, a fine slime is prepared by soaking a portion of the pulverized clay in water, passing it through a sieve, and afterwards mixing the dry clay and kneading to the right consistency.

A mold of the required size for the body of the article to be made is placed on the upper portion of the old style potter's wheel, covered with the proper thickness of clay, then patted and shaped with a wooden paddle and with the hands. The Indian potter turns the model about before him by scraping his bare toes on the lower portion of the wheel, and during the revolutions he continues to smooth the clay with a narrow strip of wet cloth until the desired surface is obtained. The narrow standard or legs, as the case may be, are then fashioned, and the article removed from the mold and placed in the same inverted position until such time as the standard shall have dried sufficiently to hold the weight of the body. Handles, spouts, etc., are all formed by the hands, without molds, and joined by means of the clay slime and prepared clay.

DECORATING AND DRYING PROCESSES.

One characteristic peculiar to the Cuernavaca pottery is the inlaid decoration, for which small bits of broken china are employed. Other decorations principally used are molded reptiles and insects, molded leaves and flowers, and stamped work (Grecian and conventionalized border designs).

The making of the inlaid work is a slow and primitive process, and the execution of the many and often elaborate effects thus wrought is a great tribute to the artistic and patient Indian potter. The design to be used is first drawn upon thin paper, then placed on the damp clay and traced with a small sharp-pointed stick, after which it is slowly wrought by pressing bits of china of the proper shape into the clay, with the glazed surface on the outside. The article is now thoroughly smoothed with a wet cloth and placed in the drying room.

Molds for the formation of decorations are made in plaster of Paris from the live reptiles, insects, etc., so that each is perfect in detail. These decorations are formed by carefully pressing the clay into the mold and as carefully removing it. The edges are then trimmed and the molded decoration placed in the desired position on the article to be decorated, using the clay slime as a cement. In cutting portions of the clay preparatory to molding a crude tin knife is employed. For trimming edges a thread of fiber is used, one end being held in the mouth, the other in the hand. Stamps for fashioning the stamped decorations are made from hard wood, hand carved by the Indian.

During the drying process the pottery is watchfully shielded from sun and wind and a careful examination made each day of every piece in the drying room, so that, if possible, the molded decorations may be prevented from cracking. Should these crack before the articles are completely dried it is possible to replace the decoration, otherwise the article is valueless. While drying the handles and other delicate portions are wrapped in cloth, that the process may be equalized. At a certain time the molded decorations are well scraped and cleaned, and when thoroughly dry the pottery is polished with a piece of rough sacking and finally with a smooth cloth. It is now placed in the sun, to be completely heated before painting and burning. One color only is used in the painting of Cuernavaca pottery. This is a yellow clay from the neighboring mountains, similar to yellow ocher, simply mixed with water. The pottery is now ready for burning.

METHODS OF BURNING.

Here again we find a method most primitive. I was informed by the proprietor of the pottery factory that the habits of these Indian potters, together with a natural antipathy toward progressive usages, almost prohibits the introduction of new tools or methods. In fact, the workers refuse to substitute certain small modern tools purchased for the work, preferring their own crude ones.

No permanent kiln is used for burning, each individual process being accompanied by the building of a kiln of the size required in the following manner: A number of jars, approximately 18 inches in height and 9 inches in diameter, are placed on an open space of

ground, as closely together as possible, between and around the outer edges of which is laid the fuel. Flat pieces of previously burned pottery are used to cover the jars and fuel, upon which are piled the articles to be burned. The whole is then completely covered with many "comales" (round, flat slabs, which are used for cooking the "tortillas," a sort of a pancake and universal peon food, by being placed over burning charcoal). The fuel is then set on fire, and when well alight green grass or wet hay is thrown over the pile. The necessary burning occupies about two hours, after which time and while red hot the kiln is uncovered. Each article is removed, being lifted by an iron rod, and allowed to cool in the air, which concludes the process of manufacture.

After burning the painted portions of the pottery will have turned to a dark terra cotta, and the unpainted portions, or such pieces as are wholly left in the natural color of the clay, will have changed from a dark gray to a light terra cotta color.

The principal loss to the manufacturer occurs during the drying process, almost no breakage resulting from the burning. The Cuernavaca potter will mold any design if a drawing with required dimensions is furnished him.

The Mexican Government recently ordered a Cuernavaca vase 32 inches high, with inlaid decorations of the American and Mexican flags and the American and Mexican eagles, as a gift to President Roosevelt.

The form of the lizard, so frequently employed in decorations of this particular pottery, owes its use to the existence of a lizard, nearly 9 feet long, carved on a rock, supposedly by the Aztecs, in the village of San Antone.

The wage of the potters ranges from 37 centavos to 1 peso a day, the foreman of the factory receiving 8 pesos a week (100 centavos=1 peso; 1 peso=49.8 cents).

THE GUADALAJARA POTTERY.

Pottery made in Guadalajara is probably more widely known than that of any other Mexican manufacture. The potteries are situated about 6 miles from the city proper, in the Indian village of San Pedro. Here another race of potters, true descendants of the Aztecs, live, handing down from one generation to another the knowledge of working this peculiar class of ware called by them "Zapotecas." Many of the original forms and designs mentioned in the records of the friars at the time of the conquest are preserved in the Guadalajara pottery of to-day, this being especially true of the ware known as the "Aromatic" pottery, which is colored in the burning.

The clays from which the Guadalajara potteries are formed are of two kinds, black and white. The black clay is found in veins 1 to 2 meters (meter=3.28 feet) below the general level of the ground, and is a formation of vegetable origin, as is proved by its peculiar odor and also by petrified remains. The veins vary greatly in length, but the width is usually from 3 to 4 meters. The white clay is more abundant than the black, and is very compact and heavy, being a subsoil formation, covering large areas and varying from one-half to 2½ meters in depth. It is a great detriment to agricultural interests in the region.

The black clay is prepared by simply dissolving in water, producing a very sticky substance. The white sort is thoroughly dried,

pulverized, and passed through a fine wire sieve, then added to the wet black clay and well kneaded. For molding the finer forms the potter uses the substance as thus prepared. If flower pots, garden jars, etc., are desired, a fine sand is added.

EACH MOLDER A SPECIALIST.

Each family of workers are specialists in their line of work. Many forms and designs are produced, but only one design in one family. The potter who molds flower pots can not mold water bottles, nor can the one who molds water bottles mold figures.

I was informed by the proprietor of the important Guadalajara establishment that the transfer of work has been tried, but always without success. The worker teaches his son to perform the same task as his own, and should he have no son the knowledge of the special form or design of his work is lost at his death. By way of illustration, I was told of an aged Indian who had for many years furnished the firm with a special form of jar, known as the "Montezuma." The Indian died, leaving no heirs, and the loss of this particular article, which was naturally a rarity commanding a good price, resulted.

Unlike the Cuernavaca potters, the Guadalajara workers never use a potter's wheel. Here the small articles are made in molds and the larger pieces are formed by placing a mass of prepared clay on the ground, while the potter walks around and around the clay to be molded, using a piece of hogskin, well soaked in water, for forming and smoothing the article.

The tools which are employed are a piece or knife of tin, a wire for cutting or trimming, and a nail or small piece of pointed wood never exceeding 6 inches in length. A dish of water and some white clay in powdered form are placed near by for cleaning the clay from the hands during the process of molding.

PRODUCTION OF COLORS IN FIRING.

The Guadalajara ware is fired or burned in cylindrical ovens, with a hearth and no chimney, made especially for this purpose, different fuels being employed to produce the different colors. For the red-colored pottery a grass locally known as "tepopote" is used, which is found in abundance on lands having a volcanic formation in appearance much like pumice stone. Such lands are called by the natives "jal," and from their formation it is said the State takes its name of Jalisco.

When a grayish-white color is desired, the pottery is burned with twigs of "taray" (tamarisk), or shavings may be used. It is impossible to employ wood or coal of any kind, as the necessary requirement is the flame rather than the heat. The burning process occupies about twelve hours, more or less, according to the size of the oven in use.

The colors employed are mineral, manganese for the black, kaolin for the white, while the reds and yellows are of special kinds of clay. Water bottles, for instance, which are often made in red or yellow colorings, are first painted and then burned, painted while still warm, and again subjected to the flames of dried grass, which burns with much smoke.

The bright greens, blues, etc., are obtained from pigments mixed with gum, varnish, or oils, and, not being fired, these colors will in

time wear off. Those interested in the manufacture of Guadalajara ware endeavor to have preserved the old forms, strictly Indian, rather than attempt to produce copies or imitations of forms more modern.

However the ancestry of the primitive Mexican Indian may be decided, it is certain that the decorations or paintings, which are all of Indian origin, on Guadalajara pottery very closely resemble Chinese decorations.

The wages paid here are approximately the same as in Cuernavaca, the most expert potter receiving not more than 1 peso a day, and working from 8 a. m. to 12 m. and from 2 to 6 p. m.

PUEBLA AND OAXACA POTTERY.

The Puebla pottery is a more or less crude earthenware, having a white, or rather grayish-white, ground, with decorations usually in the delft blue shades, although browns and yellows sometimes appear. The Puebla tiles are a famous characteristic of the city of the same name; in fact, Puebla is a city of tiles. They are everywhere used—on the domes of churches, the façades of residences, and on walls and floors. The decorations are usually medieval in design and, though somewhat crude, not inartistic. Puebla ware is known as "Talavera."

The pottery made in Oaxaca is a green glazed ware, and includes articles for table and kitchen use.

The principal output of all varieties of Mexican pottery is at present for domestic use. With the exception of that purchased and sent to the United States by American tourists very little is exported.

[Seven photographs of Guadalajara and three of Cuernavaca pottery accompanied the report and are on file in the Bureau of Manufactures.]

CHINA.

REVIVAL OF THE ART OF PEKING CLOISONNE MANUFACTURE.

The following report on the subject of the Chinese manufacture of cloisonne at Peking is transmitted by Consul Wilbur T. Gracey, at Tsingtau:

Probably the finest quality of cloisonne now manufactured is that which comes from Peking. The Industrial Mission Depot, a branch of the Peking Industrial Institute, has recently been opened at Shanghai, where a large supply of cloisonne is always on hand, and where vases, bowls, jars, plates, boxes, incense burners, water pipes, umbrella handles, cigar boxes, napkin rings, etc., can be purchased at any time. Goods are packed by this depot and shipped to all parts of the world. The cloisonne exhibit of the Peking Industrial Institute was awarded a gold medal at the St. Louis Exhibition of 1904. The following quotation regarding the manufacture of this ware will be of interest:

> The base, whether vase, bowl, or dish, is of copper and is obtained ready made from the coppersmiths. The design is then etched on the copper base, and delicate copper ribbons are shaped by means of pincers to follow the lines of the design. These are cemented into position by means of a special vegetable glue, fortified by a metallic composition, which maintains the shape of the wire tracery while it is being annealed in a primitive oven surrounded by a wire cage containing charcoal, which is kept at a red heat with fans.

When cool the vase is scoured in an acid decoction and is then ready for coloring. An artist, supplied with a number of saucers containing all the colors he requires, takes the vase, and, from memory, and without reference to any illustration, fills in the interstices between the wires (the cloisons) with the proper pigments. These consist of crystals with a base of saltpeter and a kind of calcareous sandstone found in the neighboring hills. The different colors are obtained by composition with iron pyrites, oxides of iron, or salts of lead. The colored crystals, ground to a powder, are mixed with rice water, and the resulting paste forms the base of the enamel. The colors are applied by means of a small trowel, and the operation calls for great skill and dexterity.

When all the spaces are filled the vase is again baked in the oven for a certain number of minutes, as decided by the expert in charge of this operation. When cool the vase is smoothed off with a file and returned to the coloring room, where all defects are made good. In some cases several of the spaces must be done over again; the solid vitreous color is chipped out and the cloison refilled with paste.

The vase is again baked and polished, this time with limestone, on a lathe. The retouching, rebaking, and polishing are continued until the desired result is obtained. The final lathe polishing is done with charcoal.

The vase is then ready for gilding, which is done by an ordinary galvanic process and a final polishing renders the article ready for the market.

AUSTRIA.

COMBINE OF CHINA MANUFACTURERS—EFFECT ON PRICES IN AMERICA.

Consul John Steel Twells reports that on November 25 the 24 largest china manufacturers of Austria held a meeting at Carlsbad at which it was determined to form a trust with the object of increasing the price of china goods and to establish two different market values, viz, one for Austria and another for the United States. The consul adds:

It is pretended that the class of china goods exported differs materially from that sold in this country, and therefore two different market prices will be established. This trust formation will greatly interest china dealers in the United States, and may encourage our manufacturers of china goods to increase their own production.

DRUG TRADE.

PRODUCTS AND MARKETS.

ASIATIC TURKEY.

DEALERS IN OPIUM AT SMYRNA EXPERIENCE CONSIDERABLE LOSSES.

Consul Ernest L. Harris says in a report from Smyrna that among the manifold products of Asia Minor none possesses a greater degree of importance, as far as the commercial interests of the country are concerned, than does opium, which leads him to furnish the following trade information:

Opium is the most important and valuable drug exported from this country. The crop is usually brought to the Smyrna market about the end of July or the beginning of August. If the opium has been well dried, it soon finds a purchaser; but if it is damp it becomes a drag on the market. Dry opium, therefore, fetches a better price. That which is intended for export to foreign countries is packed in zinc-lined wooden cases and hermetically sealed.

The price of opium in the Smyrna market is influenced by various conditions. Among the first is, how much has been left over from the last season, and especially whether the London market has been able to dispose of all that it had on hand. For some thirty years past the American market has also exerted considerable influence upon the supply and demand. The fluctuation in prices is primarily due to speculation. People speculate in opium in Smyrna, London, New York, etc., and there are sometimes such irregularities in prices that it costs more per pound in Smyrna, the origin of the article, than it does, for example, in America.

YIELD AND PRICE QUOTATIONS.

In former years opium was sold in two qualities, namely, that which was examined and cleaned and that which was left uncleaned. An expert examined each basket, loaf by loaf, carefully removing those of a dark color, together with any extraneous matter. Twenty years ago, however, this method was abandoned. Although the expert examiner is still retained, yet the examination is said to be considerably less rigid than formerly.

Many efforts have been made in Europe to produce a quality of opium equal to that of Smyrna. But the attempts have been failures, for the reason that the Asia Minor product contains, on an average, about 10 per cent of morphine. Opium merchants in Smyrna say that the output in this country one hundred years ago amounted to something like 500 baskets of 165 pounds each. In 1850 it had increased to 3,000, and 1875 more than 5,000 baskets. The annual output now varies anywhere between 4,000 to 8,000 baskets. The [illegible] yield ever known was in 1902, when it amounted to [illegible] The 1907 crop was 4,000 baskets, against [illegible] 9,000 in [illegible] and 10,000 in 1904.

If the output of opium has been very irregular, the governing prices have been equally so. In 1850 opium sold for $6.65 to $8.55 per kilo of 2.2 pounds. In 1869 it had reached the maximum price of $30 per kilo, or about $15 per pound. To-day it sells for $2 to $3 per pound.

PRESENT AND PROSPECTIVE MARKET CONDITIONS.

The year 1907 was not a good one for Smyrna merchants dealing in opium. To begin with, there was a shortage of about 5,000 baskets as compared with 1906. Then, again, they thought the market might be controlled somewhat by buying up foreign opium at high prices. But European buyers were slow to respond to the higher prices, with the result that Smyrna merchants have been compelled to sell at the old figures, with a considerable marginal loss on what they had purchased abroad. Some say that $300,000 to $350,000 has been lost in this way. At present most of the 1907 crop still remains unsold.

Many merchants, however, still have hopes of disposing of last year's crop on a favorable basis for the following reasons: The outlook for 1908 is not good. At the time of planting last fall no rains came to render the soil pliable, so that the poppy seed could be covered in a satisfactory manner. It is also reported that there is but little stock on hand in Constantinople, Saloniki, London, and New York. The hopes placed in Persian opium, as a substitute for the Smyrna product, seem not to have been realized, owing to the fact that it contains only about 6 per cent of morphine, while that of Smyrna has 10 per cent.

The statistics of this consulate show that $388,205 worth of opium was shipped to the United States during 1907. [A treatise on the culture of the opium poppy forwarded from Smyrna by Consul Thomas H. Norton may be perused at the Bureau of Manufactures.]

SALVADOR.

THE UNITED STATES LEADS IN PHARMACEUTICAL SUPPLIES.

Consul-General Samuel E. Magill, of San Salvador, reports that the trade in drugs and medicines in Salvador is conducted, with few exceptions, by native pharmacists, who are required to pass careful examinations before a special board, and the Government exercises careful supervision over the conduct of the business, particularly as to the sale of poisons and anesthetics, as well as to the capacity and intelligence of the prescription clerks. He adds:

American drug and medicine exporters have evidently paid attention to this field and as a result have made a good showing in comparison with those of European countries. In general the following is the way the local drug trade is divided as to source of supply:

United States.—Medicinal soaps, medicated cotton, rubber goods, tooth powders, medicines in pills, gauze for wounds, paper goods, patent medicines, brushes, special preparations, dental articles, and medicinal wines.

Germany.—Basic drugs and chemicals, toilet soaps, perfumes, patent medicines, and essences.

England.—Salts, toilet soaps, and patent medicines.

France.—Perfumes, toilet soap, patent medicines, glass tubes, syringes, etc., apparatus generally, and toilet powders.

Some few specialties are brought from Italy and Spain.

AMERICAN PATENT MEDICINES—EUROPEAN ADVANTAGES.

American patent medicines hold the market here for the sole reason that they are more extensively advertised. Such European compounds as are advertised find ready sale also, so it is not a question of nationality so much as willingness to advertise in newspapers, and by means of fancy cards and pictorial almanacs create a demand that druggists must supply, and the demand exists as long as the advertising is pushed.

Salvador, being somewhat difficult of access, traveling drug salesmen rarely canvass this territory, and most of the business is done through price lists and special catalogues. In the matter of lists the local druggists prefer those prepared by German and French houses as being better arranged and more complete.

American houses pack their goods as well as those of Europe, but can improve by making packages lighter without sacrificing strength, as duty is paid on gross weight. European houses have the advantage over American houses of a parcels-post treaty whereby small orders, needed quickly, are placed in Europe rather than in the United States. Liquids are frequently shipped this way and almost invariably arrive in good condition.

ROBBERY COMPLAINTS—TIME PAYMENTS.

One drug house complains of greater proportion of robberies from American than from European shipments. It is believed that this trouble occurs at points where packages sometimes remain in warehouses for months awaiting shipment. Such losses from American shipments are borne by the local consignee, as insurance taken in America does not cover from shipper to consignee as does European insurance. This has such an effect on trade that it would be well for American drug exporters to investigate the truth thereof and rectify it if possible. Whether true or not, it is a fact that packages that should contain perfume, soaps, and other valuable articles have reached here entirely empty, the merchandise having been replaced by stones or dirt. The American shipper gives no redress to the consignee for such loss, whereas under almost similar conditions in shipments from Germany and England Lloyds agents here have certified to such loss and the insurance company has paid it.

Some local druggists state the longer time for payment offered by European shippers results in loss of trade to American houses. This subject has been much discussed and is one that the shippers are doubtless familiar with and must settle to suit their own interests. To increase their trade in Salvador American drug supply exporters might look well into the following points: Greater advertising of patent medicines; lighter packing without sacrificing strength; secure insurance clear through from house of shipper to house of buyer; more time for payment without increase of price; parcels-post treaty; investigate and prevent robberies en route; improve catalogues and make lists more convenient and print both in the Spanish language.

Most of the American houses, especially two of them, have the confidence of the local consumers, who seemingly would like to increase their purchases of American goods, so it might be well for a Spanish-speaking agent to cover this field occasionally and get the direct and technical information to accomplish that end.

GERMANY.

HISTORY AND EXTENT OF THE TOILET-WATER INDUSTRY IN COLOGNE.

Vice-Consul Charles Lesimple, writing from Cologne, states that German manufacturers are averse to giving information concerning the making of toilet water, but that he has secured the following:

The toilet-water industry in Cologne was established in the beginning of the seventeenth century. At that time the city numbered about 50,000 inhabitants, while the present population is 450,000. Cologne gained preeminence in this industry through the inventors of toilet water (Eau de Cologne). These were Paul Feminis and Maria Clementine, a Catholic nun, who came to Cologne, where for many years they manufactured the Eau de Cologne, and so founded the toilet-water industry of this city. This was begun on a small scale, with only few persons employed, whom they did not initiate into the secrets of the whole process, the last and most important mixture being made by the inventors themselves. Paul Feminis left the secret with the Farina family, while the nun bequeathed the secret to one Peter Schaeben, who had been her assistant for many years. Both families still carry on the business and are the leading manufacturers.

The importance of the industry is by no means great enough to make the city dependent upon it. There are about 30 manufactories of Eau de Cologne in this city, 5 of them being of importance. They each employ on an average 10 men. The wages paid to employees vary between $1.25 and $2 per day, while the office men receive salaries, according to their ability, ranging from $1,500 to $2,000.

It is difficult to approximate the money invested in the business, but it may be stated that the outlay by the different firms varies from $10,000 to $200,000. The toilet-water industry is confined to the city of Cologne. The chief countries making purchases are England and its colonies, Austria, Russia, etc.

PROPRIETARY MEDICINES.

STRICT REGULATIONS GOVERNING SALES—NO IMPORT DISCRIMINATION.

Responding to an inquiry from an American firm concerning the introduction of proprietary medicines into Germany, Consul-General A. M. Thackara, of Berlin, says:

All medical preparations imported into Germany, no matter from what country, have to pay duty as secret remedies (Geheimmittel) amounting to $119 per 2,204 pounds, unless the exact composition of the ingredients is given, not only to the customs authorities, but is also printed openly on the packages.

The police authorities reserve the right also to have analyses made of such preparations by competent experts, and they may even raise an objection if an exorbitant price is charged, when the value of the separate ingredients is considered. These authorities may at their discretion even publish the selling price of patent medicines, together with the cost of each ingredient. The regulations governing the importation and sale of proprietary medicines in Germany are exceedingly strict, but I can not say that there is any unusual discrimination against those made in the United States.

GREECE.

CULTURE, PREPARATION, AND EXPORTATION OF THE HASHISH DRUG.

Consul Edward I. Nathan, of Patras, contributes the following report on the Greek preparation and exportation of the hashish drug:

Hashish, that strange drug which has given our language its word assassin—a man so frenzied by the drug that he accomplishes murder—and which is used by the Persians, Turks, and Egyptians in a manner akin to the use of opium by the Chinese, is the product of a plant grown in large quantities in the Peloponnesus (southern Greece) in the district about Tripolitza. The plant grows to a height of about 4 feet and its branches are thickly covered with small leaves and studded with tiny seeds.

The entire plant, stalk and branches, is cut within a few inches of the root and laid out in the sun to dry. The branches are then rubbed to separate the seeds and these in turn are ground into a fine powder, which constitutes the drug. The best variety of the plant grows in the district of Mantinea, and the center for export is Tripolitza, from which place it is sent to the ports of Kalamata and Nauplia, and from thence abroad. It is estimated that about 100,000 okas (265,000 pounds) of the drug, valued at 2,000,000 drachmas (about $350,000) are annually sent from Tripolitza.

The drug has the power of inducing sleep and producing pleasant and fantastic dreams. Continued use of hashish renders its devotees wild and restless, and results in a complete wreck of their mental and physical constitution. For this reason the Egyptian Government has prohibited the importation of the drug, and recently entered into a convention with Greece to prevent its exportation from there to Egypt, where the consumers of hashish are very numerous. The drug is practically never used in Greece, but is now exported to the various ports of England, Austria, France, and Italy, and from there much, no doubt, ultimately finds its way to Egypt.

MISCELLANEOUS.

FOREIGN PENAL INSTITUTIONS.

BRAZIL.

PERNAMBUCO'S CONVICT COLONY ON THE ISLAND OF FERNANDO.

Consul George A. Chamberlain, of Pernambuco, has prepared the following report on the resources and possible development of the Brazilian archipelago of Fernando de Noronha, situated just 300 miles northeast of Recife de Pernambuco:

This island group has been the subject of various industrial concessions, but is at present more of a sidelight to penologists than a bone of contention among capitalists. The history of the group, which consists of one big island distinguished by a rock peak 1,000 feet high and 17 smaller isles, goes far back in the centuries. In 1504 the group, then known as St. Johns, was granted by the King of Portugal to a cavalier, Fernão de Loronha, and according to the Capuchin monk Claude de Abbeville, who visited the islands with the French expedition against Maranhao, a penal settlement was already established in 1612, composed of a score of men, women, and children. A master of the soil received exiles from the mainland, who became virtually his slaves.

This small beginning grew under the Brazilian Empire into one of the greatest penal settlements in the world. As a national prison the islands attained a population of 3,000. In 1887 this number had fallen off to 2,351, of whom 1,434 were convicts. A few years ago, however, the National Government ceded the archipelago to the State of Pernambuco and all other States were forced to withdraw their convicts.

PRESENT STATUS AND PENAL COLONY OPERATIONS.

The penal settlement is now the penitentiary for Pernambuco alone, a State with an estimated population of 1,250,000. Since there is no capital punishment in Brazil, Pernambuco is obliged to imprison its murderers and at the end of 1906 there were 355 man killers in Fernando out of a total of 442 convicts. This large number of criminals increased during 1907 to over 600, two-thirds of whom are undergoing the penalty for murder. Of the 400 murder convicts only 7 are women. Those convicts who are married and have their families with them are allotted little huts in the village. Trusties are given posts of responsibility and only newcomers and suspects, numbering approximately 200, are kept locked up during the night.

The convict island is 5 miles long and about half as wide. With only a little rain, it is wonderfully fertile and Fernando cotton is of

a superfine quality, commanding a special quotation in the market. Aside from cotton the island produces in large quantities corn, beans, mandioc, and pumpkins. It is one of the most orderly and productive bits of tilled ground in all Brazil, and shows what might be accomplished in this country in the way of general agriculture under systematized labor.

The routine at Fernando is systematic. The 600 convicts are called to the fields at 6 in the morning and work until 2 in the afternoon for the State; after that and until 6 they may work for themselves, the State allotting to each a plot of ground.

The director is allowed a squad of 30 of the State police to control the convicts, and he consequently is dependent upon a combined system of trust and espionage to frustrate the frequent attempts at escape. No trees suitable for rafts are allowed to grow on the island and the trusties who are allowed to fish are allotted tiny catamarans, far too small for sea use. A Government-chartered steamer makes a trip from Pernambuco once a month. Economically Fernando de Noronha is one of the cheapest prisons in the world.

INDUSTRIAL FEATURES.

The Fernando group holds the distinction of being the rock upon which the great equatorial and south equatorial currents divide, incidentally forming a triangular sea of quiet water between the archipelago and the mainland. This quiet water teems with fish of every description, prominent among which is the bicuda, a fish likened by some to the barracuda of the West Indies, but which in size and flesh, when dried, has more the appearance of the northern cod. The bicuda is caught by hand, salted and dried in small quantities, and occasionally a few bundles find their way to the mainland. Indicative of its market possibilities it may be stated that in 1906 the Great Western of Brazil Railway carried from Pernambuco alone to the interior 9,347 tons of dried cod imported from Newfoundland. A delicious sardine also abounds in the Fernando fish preserve and could be tinned in large quantities on the island for the inviting and steady market of South America.

These are merely two of the many inducements to the securing of a fisheries concession. A third feature is the assured labor at a nominal price, the fixed wage of a convict being about 10 cents a day. Fernando also presents an excellent stopping place for ships on the Europe-South America run, which pass within signal distance to the number of about four per day. The island is also not far off the New York-South America course. As a coaling and provisioning station it would immediately attain preeminence in the South Atlantic, taking the place in the southern ocean of St. Vincent, Funchal, Barbados, St. Lucia, and of St. Thomas in the northern.

As to these opportunities it should be remembered that there are the usual obstacles to government concessions in Brazil. Privileges can no longer be had for the asking and in every current case there is competitive rivalry in every step toward a franchise. Should Fernando become a coaling station its large deposits of phosphate of lime, now rendered worthless on account of high freights, would immediately become available and of great value.

The island is now a part of the State of Pernambuco, but there is a bill before the State Congress which contemplates returning it to the Federal Government. Sea concessions in any case would have to be obtained from the latter and it is probable that the island will never become an industrial or commercial success unless through the cooperation of the National Government.

CHINA.

ADVANCED SYSTEM OF HANDLING CRIMINALS AND TRANSGRESSORS.

Vice-Consul Ernest Vollmer, writing from Tsingtau, says that one of the unfailing signs of the influence which contact with Western civilization and methods has upon the Chinese is evident in the gradual alteration of the systems of punishment of crime in vogue throughout the Empire. The vice-consul gives the following illustrations of this tendency:

The ordinary punishment for minor crimes for ages past has been beating, or "bambooing" as it is locally called. In the Ching Chou-fu district of Shantung this has been entirely done away with during the past few years, and a compulsory penal servitude substituted. This sentence is now used for petty larceny, vagrancy, disturbing the peace, and all similar transgressions; while professional beggars, cripples and fakirs of all classes are also put to work in these public institutions.

Reporting on the station under his care the police magistrate of Loanhsien, in the district named, states that the long-deserted and neglected governmental buildings in his city have been restored during the past year, by penal labor, and are now used as an industrial institute, where minor criminals are kept busy at useful and remunerative work. Aside from the reconstruction of 3 large work halls, a wash and bath house has been completed, and a modern sick ward erected. The interior is so arranged that the inmates are divided according to age and the misdemeanor for which they are interned, while the guards and supervisors watch them through a wicker partition.

Close at hand is a new administration building where the officials live and the offices are located; a general mess hall and kitchen; and a schoolhouse, where young men from the district are taught useful crafts and trades free, if they desire this education. This school was organized in compliance with a demand from the inhabitants of the district. A large farm, connected with the old Government establishment, is tilled by the inmates of the place, and returns a considerable revenue, aside from supplying much of the food needed.

The cost of maintaining this quasi prison is nearly met by the institution itself, a deficit of but $450 last year being the whole amount that stood between it and self-support, even after all salaries of officials and teachers had been paid. A similar "school of correction" is located at Itukhsien, and from the success of these pioneer attempts at social betterment of Shantung it may fairly be assumed that before long every young man of the province who goes wrong will have an opportunity of learning, free, a trade which will enable him to materially better his position in society.

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Probably the finest quality of cloisonne now manufactured is that which comes from Peking. The Industrial Mission Depot, a branch of the Peking Industrial Institute, has recently been opened at Shanghai, where a large supply of cloisonne is always on hand, and where vases, bowls, jars, plates, boxes, incense burners, water pipes, umbrella handles, cigar boxes, napkin rings, etc., can be purchased at any time. Goods are packed by this depot and shipped to all parts of the world. The cloisonne exhibit of the Peking Industrial [illegible] was awarded a gold medal at the St. Louis Exhibition [illegible] following quotation regarding the manufacture of [illegible] of interest:

The base, whether vase, bowl, or dish, is of copper and is [illegible] from the coppersmiths. The design is then etched on the [illegible] delicate copper ribbons are shaped by means of pincers to fo[illegible] design. These are cemented into position by means of a [illegible] fortified by a metallic composition, which maintains the [illegible] tracery while it is being annealed in a primitive oven [illegible] cage containing charcoal, which is kept at a red heat with [illegible]

When cool the vase is scoured in an acid decoction and is then ready for coloring. An artist, supplied with a number of saucers containing all the colors he requires, takes the vase, and, from memory, and without reference to any illustration, fills in the interstices between the wires (the cloisons) with the proper pigments. These consist of crystals with a base of saltpeter and a kind of calcareous sandstone found in the neighboring hills. The different colors are obtained by composition with iron pyrites, oxides of iron, or salts of lead. The colored crystals, ground to a powder, are mixed with rice water, and the resulting paste forms the base of the enamel. The colors are applied by means of a small trowel, and the operation calls for great skill and dexterity.

When all the spaces are filled the vase is again baked in the oven for a certain number of minutes, as decided by the expert in charge of this operation. When cool the vase is smoothed off with a file and returned to the coloring room, where all defects are made good. In some cases several of the spaces must be done over again; the solid vitreous color is chipped out and the cloison refilled with paste.

The vase is again baked and polished, this time with limestone, on a lathe. The retouching, rebaking, and polishing are continued until the desired result is obtained. The final lathe polishing is done with charcoal.

The vase is then ready for gilding, which is done by an ordinary galvanic process and a final polishing renders the article ready for the market.

AUSTRIA.

COMBINE OF CHINA MANUFACTURERS—EFFECT ON PRICES IN AMERICA.

Consul John Steel Twells reports that on November 25 the 24 largest china manufacturers of Austria held a meeting at Carlsbad at which it was determined to form a trust with the object of increasing the price of china goods and to establish two different market values, viz, one for Austria and another for the United States. The consul adds:

It is pretended that the class of china goods exported differs materially from that sold in this country, and therefore two different market prices will be established. This trust formation will greatly interest china dealers in the United States, and may encourage our manufacturers of china goods to increase their own production.

time wear off. Those interested in the manufacture of Guadalajara ware endeavor to have preserved the old forms, strictly Indian, rather than attempt to produce copies or imitations of forms more modern.

However the ancestry of the primitive Mexican Indian may be decided, it is certain that the decorations or paintings, which are all of Indian origin, on Guadalajara pottery very closely resemble Chinese decorations.

The wages paid here are approximately the same as in Cuernavaca, the most expert potter receiving not more than 1 peso a day, and working from 8 a. m. to 12 m. and from 2 to 6 p. m.

PUEBLA AND OAXACA POTTERY.

The Puebla pottery is a more or less crude earthenware, having a white, or rather grayish-white, ground, with decorations usually in the delft blue shades, although browns and yellows sometimes appear. The Puebla tiles are a famous characteristic of the city of the same name; in fact, Puebla is a city of tiles. They are everywhere used—on the domes of churches, the façades of residences, and on walls and floors. The decorations are usually medieval in design and, though somewhat crude, not inartistic. Puebla ware is known as "Talavera."

The pottery made in Oaxaca is a green glazed ware, and includes articles for table and kitchen use.

The principal output of all varieties of Mexican pottery is at present for domestic use. With the exception of that purchased and sent to the United States by American tourists very little is exported.

[Seven photographs of Guadalajara and three of Cuernavaca pottery accompanied the report and are on file in the Bureau of Manufactures.]

CHINA.

REVIVAL OF THE ART OF PEKING CLOISONNE MANUFACTURE.

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> The base, whether vase, bowl, or dish, is of copper and is obtained ready made from the coppersmiths. The design is then etched on the copper base, and delicate copper ribbons are shaped by means of pincers to follow the lines of the design. These are cemented into position by means of a special vegetable glue, fortified by a metallic composition, which maintains the shape of the wire tracery while it is being annealed in a primitive oven surrounded by a wire cage containing charcoal, which is kept at a red heat with fans.

When cool the vase is scoured in an acid decoction and is then ready for coloring. An artist, supplied with a number of saucers containing all the colors he requires, takes the vase, and, from memory, and without reference to any illustration, fills in the interstices between the wires (the cloisons) with the proper pigments. These consist of crystals with a base of saltpeter and a kind of calcareous sandstone found in the neighboring hills. The different colors are obtained by composition with iron pyrites, oxides of iron, or salts of lead. The colored crystals, ground to a powder, are mixed with rice water, and the resulting paste forms the base of the enamel. The colors are applied by means of a small trowel, and the operation calls for great skill and dexterity.

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of a citizen who resides within the jurisdiction of his Government to inscribe his name on a register and to state the facts concerning his foreign residence to a representative of his Government.

It is frequently of great importance for the State Department to know without any delay how many American citizens there are in a foreign country where they reside, in order to determine its attitude in regard to movements and measures which may affect their interests. This can only be done by means of such a registry as is called for by the regulation.

COMBINED STOPPER AND POURER.

SIMPLE BUT INGENIOUS MECHANISM INVENTED BY A SOUTH AMERICAN.

Consul-General Alban G. Snyder, of Buenos Aires, states that it is reported that a large oil dealer in that Argentine city has invented a stopper and pourer for vessels containing marketable liquids which at the same time offers no projections to prevent its packing and storage. It is thus described:

The invention is very simple, consisting of a conveniently shaped discharge spout, which, when not in use, lies in an inverted position inside the vessel, and the butt end of which, closed by a small plate and secured by a ringed cap screwed over all, forms the stopper proper.

Other advantages claimed for this stopper are that it lies in a small hollow in the outer surface of the vessel which it closes and thus lies flush with such surface; that the ringed cap is raised slightly above the level of the closing plate secured by it, so as to form a depressed round space intended to receive the seal of the manufacturer or packer of the liquid. The unscrewing of the cap and opening of the vessel can not be accomplished without breaking this seal, a guaranty of the quality and quantity of the contents of the vessel being afforded thereby.

It is claimed that it can be turned out in tin or a special composition to be used with wines or other similar liquors at half the price of any other stopper now on the market.

PERUVIAN VICUNA DISAPPEARING.

THE HERDS OF THIS VALUABLE MOUNTAIN ANIMAL ARE DIMINISHING.

Consul-General Samuel M. Taylor, in a report from Callao, says that the graceful vicuna, one of the most useful members of the Peruvian fauna, is in danger of disappearing from the elevated plains of the Andes, and this seems to be so much realized that steps are to be taken to prevent their total extinction. Mr. Taylor adds:

Formerly it was nothing unusual for travelers in the Sierra to see great herds of the vicuna moving about on the high plateaus, but now, in consequence of their being so persistently hunted, most of them have emigrated to higher altitudes, which are regions more arid and more rigorous in climate. Here many perish, not from the effects of the snow and hail storms prevailing there and which they are very well able to stand, but from sheer starvation, vegetation being extremely scarce at these great heights.

In the summer season the vicunas resort to the valleys in quest of food, which they are always able to find in abundance on springy ground and on the banks of the small streams and lakes. But these, unfortunately, are the places where they are usually hunted, with result that they are continually taking fright and escaping to the higher regions, where, fearing to return, they perish of inanition, wandering around the dreary peaks of the great mountains.

According to figures issued, the exports of vicuna wool and hides from Peru during the last five years are as follows:

Year.	Wool.		Hides.	
	Pounds.	*Value.*	*Pounds.*	*Value.*
1902	4,078	$1,773	2,694	$660
1903	7,864	3,421	3,832	1,866
1904	8,618	3,739	4,066	2,193
1905	3,984	4,502	1,334	1,078
1906	11,102	12,092	3,334	1,297
Total	35,646	25,527	15,260	7,094

During the past two years the wool, which is a fine article of a reddish brown color, has been much in demand in England at from $1 to $1.25 per pound, but the supply is rapidly diminishing. The hides with the wool on are also in demand for rugs and are valued at from $15 to $50 for each rug, according to the care in selection.

BRITISH AUTOMOBILE ACCIDENTS.

NUMBER OF PERSONS KILLED AND INJURED LAST YEAR BY MOTOR CARS.

Consul Frank W. Mahin writes from Nottingham that the secretary of the Highways Protection League states that, according to accounts in the press, 932 automobile accidents occurred in Great Britain in 1907, killing 215 and injuring 675 people. For these accidents and other motor-car offenses 2,270 people were summoned, of whom 2,046 were convicted. As the number of automobiles in use is estimated at 45,000, it would seem that one in about every 22 did something illegal last year. Occasionally the same driver is summoned more than once, but his license is usually revoked if it happens more than twice.

EXTERMINATION OF MOSQUITOES.

CACTUS PASTE AS A SUBSTITUTE FOR PETROLEUM IN WARM CLIMATES.

Consul William Henry Bishop, of Palermo, Italy, transmits the following information relative to experiments made by the chief of the sanitary service at Gaboon, French Africa, with the cactus as a substitute for petroleum for the extermination of mosquitoes in warm climates:

The thick, pulpy leaves of the cactus, cut up in pieces, are thrown into water and macerated until a sticky paste is formed. This paste is spread upon the surface of stagnant water, and forms an isolating layer which prevents the larvæ of the mosquitoes from coming to the top to breathe and destroys them through asphyxiation.

It is true that petroleum can do the same service, but in warm climates petroleum evaporates too quickly and is thus of little avail. The mucilaginous cactus paste, on the contrary, can hold its place indefinitely, lasting weeks, months, or even an entire year; and the period of development of the larvæ being but about a fortnight, it has the most thorough effect.

FOOD-COOKING ECONOMY.

NONPATENTED DUTCH DEVICE FOR SAVING FUEL.

Consul Henry Morgan, of Amsterdam, sends the following report of a device for cooking foodstuffs without fuel:

A simple device for cooking foodstuffs without fuel has been in general use in Holland for the past two years among the working classes of people and may be of general interest to the people of the United States. The device consists of a wooden box, padded with hay to a thickness of about 2½ inches on the sides, bottom, and cover. The box can be made of any dimension required. The food after being partially cooked is placed on hot plates in an enameled utensil made of a size to fit snugly against the upholstering of the box. The lid of the box is then closed and the heat generated therein by the partially cooked food not only continues the process of cooking the food thoroughly, but keeps it warm for a number of hours. It is said to give great satisfaction. The device is not protected in any way by patents and can be made by anyone.

PHONOGRAMS IN SWITZERLAND.

POSTAL DELIVERY OF WIRE MESSAGES AND RATES CHARGED.

Consul Francis B. Keene, of Geneva, furnishes the following brief statement concerning the Swiss use of the telephone and telegraph:

The telephonic service in Switzerland is divided into eleven sections, one of them including this entire consular district of Geneva. In any one of the eleven sections everybody has the right to have transmitted, by writing and by postman, messages intrusted by telephone to the central office of the telephone, or given in writing to any telegraph office.

"Phonograms" must be sent by the administration to any consignee, a subscriber to the telephone in the same section; or to any consignee if domiciled within the same section.

"Phonograms" are subjected to a fixed tax of 20 centimes, plus 1 centime for each word (3.8 cents plus 0.19 cent), whereas telegrams pay a fixed tax of 30 centimes, plus 2½ centimes for each word (5.7 cents plus 0.48 cent) in the whole country.

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CONSULAR FEES.

RATES PRESCRIBED BY THE PRESIDENT.

Following is the tariff of fees prescribed by the President, under the act for the reorganization of the consular service, to be charged by consular officers of the United States. All consular charges must be in strict accordance with and be collected in gold or its equivalent, and no fee or compensation will be collected for any service not covered by this tariff. American vessels and seamen are exempted by law from the payment of consular fees. Foreign-built vessels, unregistered, owned by American citizens, are not exempt from the payment of the prescribed fees.

Nature of service.	Fee.
Miscellaneous services.	
1. Certificate to invoice, including declaration, in triplicate or quadruplicate, covering either importations or transit shipments, including any additional declaration or certificate not otherwise provided for which is required by law or regulations for use in connection with the entry of the wares or the forwarding of the same in bond	$2.50
2. Invoice of returned American goods	1.00
3. Extra certificates or declarations as above described, including immigrant's oath (Form No. 128), when issued without an invoice certificate, each	1.00
4. Certificate to extra copies of invoices, each	1.00
5. Certificate of disinfection, in triplicate or quadruplicate	2.50
6. Landing certificate, including oaths of master and mate, and the complete execution of the certificate	2.50
7. Sealing cars coming from Canada or Mexico, for each manifest in quadruplicate with the consul's certificate, including sealing of each car, vessel, bale, barrel, box, or package	1.00
8. Issuing a passport—Form No. 9	1.00
9. Visaing a passport—Form No. 10	1.00
10. Visaing a Chinese passport or certificate	1.00
11. Marriage certificate, in duplicate, Form No. 87	1.00
12. For taking into possession the personal estate of any citizen who shall die within the limits of a consulate, inventorying, selling, and finally settling and preparing or transmitting, according to law, the balance due thereon, $2 for each $100 of value or fraction thereof. If part of such estate shall be delivered over before final settlement, $1 for each $100 of value or fraction thereof to be charged on the part so delivered over as is not in money, and $2 for each $100 of value or fraction thereof on the gross amount of the residue. If among the effects of the deceased are found certificates of foreign stock, loans, or other property, $1 for each $100 of value or fraction thereof on the amount thereof. No charge will be made for placing the official seal upon the personal property or effects of such deceased citizen, or for breaking or removing the seals.	
13. For each certificate of protection, semsar, or certificate of employment issued at Tangier	2.00
Services to vessels and seamen.	
14. Bill of health, in duplicate[a]	5.00
15. Supplemental bill of health, in duplicate[a]	2.50
16. For receiving and delivering ship's register and papers, including consular certificates, as prescribed in Form Nos. 13 and 14, $1 for each 100 tons or fraction thereof, registered measurement (net), of the vessel for which the service is performed, if under 1,000 tons; but for American vessels running regularly by weekly or monthly trips, or otherwise, to or between foreign ports, this tonnage fee will not be charged for more than four trips in a year; and tonnage fees shall not be exacted for any vessel touching at or near ports in Canada on her regular voyage from one port to another within the United States, unless some official service required by law shall be performed.	

[a] Foreign war vessels are exempt from the payment of fees for bills of health.

Nature of service.	Fee.
Services to vessels and seamen—Continued.	
17. And for every additional 100 tons net or fraction thereof	$0.50
18. Shipping or discharging seamen, including the certificates thereof attached to crew list and shipping articles and given to seamen	2.00
19. Authentication of copies of protests or other necessary documents for vessels or seamen not otherwise provided for	2.00
20. Preparation and acknowledgment for vessels or seamen of any oath or declaration for which a form is given in the Consular Regulations, or a similar necessary service not otherwise provided for	2.00
21. Preparation and execution for vessels or seamen of any certificate for which a form is given in the Consular Regulations, or similar necessary service not otherwise provided for	2.00
22. Orders or letters for vessels or seamen for which forms are given in the Consular Regulations, or other similar necessary service not otherwise provided for	2.00
23. Recording, when necessary, for vessels or seamen any document covered by the provisions of the Consular Regulations, for every hundred words or fraction thereof	.50
24. Noting marine protest—Form No. 37	2.00
25. Extending marine protest—Form No. 38	3.00
If it exceed two hundred words, for every additional one hundred words	.50
26. Protest of master against charterers or freighters—Form No. 39	2.00
27. Clearance when issued by the consul, as at free ports	2.00
28. Attending an appraisement of vessel's goods or effects for each day's attendance	5.00
29. Attending sale of vessel's goods, for each day's attendance during which the sale continues	5.00
30. Attendance at a shipwreck, or for the purpose of assisting a ship in distress, or of saving wrecked goods or property, over and above traveling expenses, whenever the consul's interposition is required by the parties interested, for each day	5.00
Notarial and other services.	
31. Administering an oath and certificate thereof [a]	2.00
32. Administering oath and preparing passport application	1.00
33. Acknowledgment of a deed or power of attorney, or similar service, including one or more signatures, with certificate thereof	2.00
34. Administering any and all oaths required to be made by pensioners and their witnesses in the execution of their pension vouchers, or certifying to the competency of a local official before whom the same were executed	No fee.
35. Acknowledgments connected with the transfer of United States bonds	No fee.
36. Administering oaths to or taking acknowledgments of officials or employees of the United States Government in connection with their official business or accounts	No fee.
37. For rendering notarial services to officials of foreign governments who render gratuitously reciprocal courtesies to American diplomatic and consular officers	No fee.
38. Certifying to official character of a foreign notary or other official	2.00
39. For taking depositions, executing commissions or letters rogatory, where the record of testimony, including caption and certificate, does not exceed 500 words	10.00
For each additional 100 words or fraction thereof	.50
The foregoing fee shall cover the administration of the oath and all services of the consul as commissioner, but shall not include services of clerk, stenographer, or typewriter, which shall be additional at the rate prescribed herein for copying.	
40. Copies:	
For the first hundred words or fraction	.50
For every additional hundred words or less	.25
41. Translations; for every one hundred words or fraction	.50
42. Additional fee for all services contemplated by fees numbered 31, 32, 33, 38, 39, when rendered elsewhere than at the consular office at the request of the interested parties, for each hour or fraction thereof	1.00
In connection with any service rendered outside of the consular office at the request of private individuals, the exact amount of the expenses actually and necessarily incurred by the person rendering the service shall be collected from the persons for whom the service is performed in addition to the fee or fees prescribed therefor, and a note of the amount shall be made on the margin of the fee book and fee return opposite the entry of the service and fee; but no amount in excess of the fee or fees prescribed and such actual and necessary expenses shall be charged or accepted.	

[a] Executive order of December 21, 1906, prescribes that no fee shall be charged for the affidavit of temporary stay of owner of sealskin garment entering the United States from Canada.

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NOTE.—A series of articles by Special Agents Carden, Clark, and Dennis and various consular officers on cotton textiles, agricultural implements, locomotives, machinery, and tools in European countries have been withheld from this Monthly and will be issued in monograph form.—B. of M.

MONTHLY CONSULAR *and* TRADE REPORTS

Washington, D. C. MAY, 1908 No. 332

FOREIGN COMMERCE.

MEXICO.

MONTEREY AS A DISTRIBUTING POINT.

OPPORTUNITIES FOR THE SALE OF AMERICAN GOODS IN THE REPUBLIC.

Special Agent A. B. Butman sends from Monterey, in northern Mexico, an account of business conditions there and tells of the opportunities for the extension of American trade, as follows:

I am told that Monterey is called the Chicago of Mexico. With a population of about 90,000, it is an active commercial city, and one of the largest distributing points of the Republic. The territory which is supplied from this center includes the State of Nuevo Leon, of which Monterey is the capital, portions of the States of Tamaulipas and Coahuila, and, in fact, the greater part of northern Mexico.

The facilities for distribution are good. The Mexican Central Railroad runs southeast to the important Gulf port of Tampico, 322 miles distant, and northwest to Ciudad Juarez, opposite El Paso, on the Rio Grande. The Mexican National lines lead eastward to Matamoros, opposite Brownsville, north and east to Nuevo Laredo, and north to Ciudad Porfirio Diaz, across the river from Eagle Pass.

The fact that Monterey is so important a railway center has added great impetus toward the establishment of trades and industries, and the city is now the most important manufacturing town in northern Mexico. Its people are progressive and show wide activity in business affairs, while the vast manufacturing interests afford employment to thousands whose purchasing capacity may well be taken into account.

IMPORTANT IMPROVEMENTS—INDUSTRIAL ESTABLISHMENTS.

One of the most complete sewerage systems known, the automatic flush tank system, is being installed throughout the city, which when completed will place Monterey in first rank as regards sanitation. A splendid new water system has been recently installed and will be placed in operation upon the completion of the sewerage system. Contracts for paving the principal streets have been entered upon, which provide for asphalt pavements for the central streets and brick in other instances, the latter over a concrete foundation. The old mule cars have been taken off the lines and replaced by the modern electric-car service, which system is being enlarged by the addition of new circuits. Real estate values are firm and advancing, considerable building is going on, and all in all the appearance of this northern Mexican city is one of prosperity and advancement.

Among the industries of principal importance may be mentioned three large smelters, foundries, and the largest iron and steel plant

in the Republic, capitalized at $10,000,000 (Mexican) and employing under full capacity 2,000 hands. Ore for the consumption of this plant is secured at Golondrinas, 120 kilometers (kilometer=0.62 of a mile) from the city on the National Railroad; also from Monclova, in the State of Coahuila, and is of high grade, running to 68 per cent. The output includes pig iron, angle iron, T iron, grey iron castings, brass and steel castings, channels, steel I beams, mild steel bars, octagon drill steel, and steel rails, 12, 16, 20, 25, 30, 40, 50, and 60 pounds. Common laborers in the industry receive a wage of $1.50, skilled workmen up to $8 (Mexican) per day. The output of the plant is in no wise sufficient to meet the demands of Mexico's iron and steel markets, which afford large opportunities for American manufactures of the same order.

WOOLEN, COTTON, CEMENT, BREWING, AND OTHER INDUSTRIES.

Other industries include woolen and cotton mills, candy factory, and brickyards. A cement manufactory has been recently established 38 kilometers north of Monterey. The plant is complete and modern in every respect and is equipped with the best machinery for crushing, grinding, and burning by the most improved methods. The raw material used is from properties owned by the company, which is known as "Cementos Hidalgo, S. A." The rock-built water reservoirs of the plant have a capacity of 3,000,000 gallons, while the capacity of the factory is stated to be 500 barrels daily. The laboratories are in charge of expert American chemists.

The "Cuauhtemoc Brewery," perhaps the largest and most important brewery in the Republic, is situated in Monterey, and is a very successful commercial enterprise. The establishment covers 2,000,000 square feet of land with an admirably well-equipped factory, having a capable output of 100,000 bottles per day, manufactured according to the most modern processes. The fermentation department contains 75,000 barrels and the boiling department 375 barrels. Electricity furnishes the motive power of 2,000 horsepower. Employment is given to 1,200 persons. The output for the last year was valued at $6,000,000 Mexican.

The varied industries as enumerated above show that this northern city is not dependent upon any one enterprise or line for commercial activity, but that mining, smelting, and manufactures have assumed proportions which contribute each a very considerable share toward the present importance and the probable future growth of the city.

I am told that the tonnage brought to Monterey by the railways centering here is second only to that carried by the railways to one other city in Mexico, and that the capital city.

WHAT THE ESTATE OWNERS BUY.

Monterey being a center for wholesale trade, I would mention perhaps first of all the haciendados, or farmers, who come into the city in large numbers for needed supplies of every character. The hacendado is a large buyer and as scientific agriculture advances and the personal requirements of the laborer grow more advanced, he will without doubt become one of the best buyers in Mexico. There are in the Republic about 10,000 haciendas or farms, with which the same number of usual farms in the United States may in no wise be compared. All Mexican farms cover large estates, 1,000 acres being con-

sidered small and the average size varying from 10,000 to 500,000 acres. I am told of the existence of one hacienda in the northern State of Durango comprising 10,000,000 acres.

It must not be understood that the Mexican farmer has an amount of money to spend in comparison with the number of acres that he owns, as in the case of the average American farmer, but the purchasing power of the Mexican haciendado is large and his requirements necessarily considerable. The headquarters of a Mexican farm are in themselves a small village. There is a church, school, park, and large business offices. The farmers have their managers, submanagers, bookkeepers, timekeepers, cashiers, and hundreds of laborers, while the home of the owner or resident manager is large and fine. In addition to farming machinery and implements, wagons, hardware, paints, roofing, well-drilling machinery, windmills, weighing scales, blacksmith and carpenter tools, plantation railways, etc., needed for use on the estate, the farmer will buy office furniture, typewriter, and safes, house furniture, sewing machines, and phonographs, and since the Mexican haciendados may in fact be considered dealers themselves, they must purchase by the wholesale certain supplies necessary for the outfit and maintenance of their small army of dependents.

AGRICULTURE ADVANCING—AMERICAN IMPLEMENTS PREFERRED.

The agricultural industry is advancing rapidly at the present time. I am informed that a great deal of new land is being placed under cultivation this year, and from indications at the present time the outlook for a good agricultural season is of the brightest. Agricultural machinery and implements, also fencing wire, are in brisk demand, and good sales are being made of such daily by the wholesale dealers in Monterey. Regarding mining machinery, hardware, and edged tools, the American products hold the market here as elsewhere throughout the Republic. With very few exceptions American machinery is preferred. German manufacturers have placed a perfected gas engine on this market which is selling well. It may also be added that manufacturers of the same country are making strenuous efforts to secure the Mexican hardware trade, not without a growing degree of success. It is necessary that American hardware manufacturers be alive to this competition.

There exists a good local demand in Monterey for building materials, considerable building is at present under way, and contractors are receiving new contracts. Sanitary appliances of all kinds are required, also electric wire, fittings, and supplies.

PAPER AND CARDBOARD—WOOLEN PIECE GOODS AND CLOTHING.

Another line in which Germany seems to be successfully competing is the paper trade, a success due to the matter of price. German-made copying tissue is offered at a little more than one-half the cost of American-made tissue, and German commercial envelopes at approximately one-third less than the American. German manufacturers also make a very low price on all kinds of cardboard. I have been given the following quotations by a dealer in this city: 20 by 30 tissue, copying, white, cost f. o. b. Hamburg 20 marks (mark=23.8 cents) and 30 marks, respectively, according to grade, per 10 reams; cardboard, good quality, 19 marks 20 pfennigs per ream (100

pfennigs=1 mark); blue envelopes, 5 marks 20 pfennigs per 1,000; white envelopes, 6 marks 10 pfennigs per 1,000; a 20 per cent discount is allowed on envelopes. [Samples of each of the above articles were forwarded to the Bureau of Manufactures.] Domestic manufactured paper also enters into competition, although greatly inferior in quality. In print paper (newspaper) our only competition is with the native product.

Woolen piece goods are principally secured from England, with a small percentage from France. These goods are laid down in Mexico at a lower price than the American. Men's ready-made clothing is supplied by American houses and is well liked both for cut and style. Underwear and hosiery are principally furnished by Germany and France; shirts, collars, and cuffs by the United States; ties by the United States and England, and straw and felt hats by manufacturers of the same countries. English-made straw hats retail here for from $6 to $8 each, Mexican. American shoes predominate in the market, selling from $10.50 to $15 Mexican. The demand for the modern shoe is a growing one in Mexico, since the peons are coming more and more to adopt this style of footwear throughout the country. The custom is especially noticed in the northern cities.

A CHEAPER SHOE WANTED—RETAIL PRICES.

I would suggest that there is a need for a cheaper American shoe than is now on the market to supply the peons, whose purchasing power is of necessity very limited. I am informed that there is at the present time a considerable influx of shoes here from Spain. The Spanish shoe is handmade, wears well, and sells readily to the many who can not afford to purchase the American shoe at present on the market.

The wholesale markets of Monterey are especially good channels for the canned-goods trade, owing to the miners and haciendados of the north for whom they are the center of supply. English, Spanish, and French canned products are met in competition with our own. It is stated that French and Spanish goods are showing perceptible gains of late, owing to price. Sales of American whiskies are growing, but California wines have little chance of advance, since they meet in competition French clarets, which are priced in bulk to dealers here at 250 francs ($48.25) per ton (4 barrels to the ton) and bottled locally.

The following list shows the retail prices, Mexican, of certain food supplies obtaining at this writing, March 3, in Monterey:

Tomatoes, per kilo (2¼ pounds)	$0.45	Cheese, American, per kilo	$1.20
Corn meal, per kilo	.15	Cheese, Swiss, per kilo	1.40
Irish potatoes, per kilo	.15	Citron, per kilo	2.25
Eggs, each	.04	Beets, per bunch	.03
Butter, best, per package	.90	Turnips, per bunch	.03
Butterine, American, per package	1.10	Pears, each	.03–.05
Lemons, each	.01–.03	Dried fruit, per kilo	1.00
Salt, per pack	.05	Sausage, per kilo	1.10
Mexican lard, per kilo	.75	Oranges, each	.02–.05
Ham, per kilo	1.10	Frijoles, per kilo	.15
Cocoa, red, per kilo	1.30	Cabbage, per head	.10–.20
Coffee, Cordova, per kilo	.50	Potatoes, Mexican, per kilo	.10
Coffee, Caracolillo, per kilo	.60	Sugar, per kilo	.24
Chocolate, Mexican, per cake	.40	Green corn, per ear	.03
Carrots, per bunch	.03	Pineapples, each	.25–.35
Bananas, per dozen	.35	Onions, per kilo	.35
Pure ground coffee, per kilo	.80	Lentils, per kilo	.28
Flour, best, per 10-kilo sack	2.60	Mexican rice, per kilo	.28
String beans, per kilo	.30	Cucumbers, each	.15
Beans, American, per kilo	.40	American rice, per kilo	.40
Radishes, per bunch	.03	Bananas, per dozen	.15–.20

SUGGESTIONS TO INCREASE AMERICAN TRADE.

Mexico assuredly offers a splendid opportunity to the American manufacturer who desires to introduce his products in the Republic. To the would-be exporter and to the one who, having already gained a foothold, naturally desires to increase sales, the following suggestions as gleaned from the testimony of many in business circles may not prove untimely: Two great facts which should be considered perhaps first of all, or at least must ever be borne in mind, are that the seller is an Anglo-Saxon, the buyer a Latin, and that as far as customs, language, ideas, ways of living, business methods, etc., are concerned, the two races are nearly opposite. It is not intended to infer that the American business man encounters any insurmountable obstacle owing to the differences in the two races; on the contrary, if he will conform to certain rules and customs, simple in themselves, placing his Mexican export department in harmony with the ways and ideas of the Mexican people, he will find no more difficulty here than he finds in our own country. The fundamental principles of selling goods in Mexico are not different from those in the United States, but the difference lies in the details of those principles which should be so arranged as to fit the conditions.

Spanish is the language of Mexico, and the salesman who undertakes to sell American goods in this country should not only speak that language, but, to insure the largest measure of success, he should know something of the people, their customs, peculiarities, and their social as well as business ideas. Catalogues and literature for circulation in Mexico should be printed in Spanish, should state the cost of each article in Mexican money (pesos and centavos), and should, in addition, furnish such information as will enable the prospective buyer to arrive at the cost of the commodities offered in Mexican money laid down in this country. The American manufacturer should register his trade-marks in Mexico. The short, curt business letter sometimes sent out by American houses does not always fit the Latin-American idea, however good the results obtained from like correspondence in the United States.

Regarding credits in this country, the American commercial agencies have branches in the Republic through whom full reports on buyers may be obtained. Our European competitors show every consideration as regards this matter to the Mexican buyer. The financial and banking laws of Mexico are on a solid basis, and instances of failures are exceptional.

I am forwarding a list of various importers and dealers in Monterey, Aguascalientes, Guadalajara, and San Luis Potosi. [On file at the Bureau of Manufactures.]

AMERICAN COLLARS AND CUFFS ARE POPULAR.

Mr. Butman, writing from Mexico City, furnishes the following facts on the collar and cuff market in Mexico:

American made collars and cuffs predominate on this market, and are in increasing demand. In competition are found French, German, and English lines, also a collar of domestic manufacture which is, however, of lower grade and not sold to any appreciable extent. It is stated that perhaps larger sales of European goods are in the "standup" and "wing" styles, although the "turndown" of European make is carried by dealers and sold to some extent. It is claimed

regarding the double or turndown collar that the American goods furnish the best fitting qualities. This is doubtless due in part to the extensive use of American ready-made shirts, which find a very good market in Mexico.

French and German houses use both the metric and English systems—centimeters and inches—in marking their goods, but it is inferred from interviews with various haberdashers that the English method is satisfactory and perhaps sufficient. European made collars are packed in paper boxes holding one dozen, in the same manner as the American.

French collars retail in Mexico at 12½, 15, 20, and 25 cents gold each according to quality; German and English collars sell at 25 cents each or $2.75 per dozen. The three brands of American collars noted on the market here are sold at 12½, 25, and 37½ cents each.

[Samples of European collars sold in Mexico City, which were forwarded by Mr. Butman, will be loaned to American collar makers and exporters by the Bureau of Manufacturers.]

INDUSTRIAL AND TRADE REVIEW.

BUDGET FOR THE NEXT YEAR—IMPORTS AND EXPORTS—A SMALL SURPLUS.

The budget of the Mexican ministry for the fiscal year ending June 30, 1909, estimates a surplus of $88,171 in United States currency, which is the money quoted in this article. Provision is made for increasing the salaries of all those Government employees whose salaries were not increased during the current year; also for the establishment of old-age pensions.

The total exports for the fiscal year show a balance of $7,131,000 over imports. But the national debt is almost all held abroad, and on that $11,679,000 interest is paid each year. Besides that the loans of several of the individual States and municipalities are held abroad, and the railroads remit over $12,000,000 annually to their foreign bond holders, and the banks also send large sums abroad in dividends. This difference between the amount received and the amount sent abroad is said by the financial minister to be made up by the continued investments of foreign money in the country. But the recent financial stringency lessened these investments, caused an increase in the interest rate, and a postponement of new undertakings, greatly to the injury of business generally.

PRINCIPAL ARTICLES OF EXPORT.

Silver was the product of most value exported during the year, and vegetable products were second in value, and other mineral products third. Vegetable products were exported to the value of over $34,000,000 American money, and animal products to the value of about $5,000,000, and manufactured products to the value of $1,829,000. The most important products of the Mexican mines next to gold and silver are copper and lead. In the last fiscal year about $10,000,000 in value of copper were exported, and $3,500,000 worth of copper ore; lead to the value of $1,500,000, and lead ore to the value of $330. Zinc was exported to the value of $1,000,000 and antimony to the value of nearly $700,000. Ixtle fiber, chicle (chewing gum), heniquen, garbanzos (chickpeas), and rubber are the prin-

cipal factors in the vegetable products exported. The exports of coffee and tobacco both declined. In the case of coffee it was due to a bad crop, and in the case of tobacco there was an increased home consumption, but the manufacturers of cigars do not seem to be able to compete with the more celebrated Cuban brands. The export of undressed hides advanced from 10,800 tons in the previous year to 13,220 tons last year, with a value of $4,316,000. Exports of sugar increased from 5,072 tons in 1906 to 7,049 tons in 1907. The exports of cotton seed and cotton paste continue to develop, the aggregate in the fiscal year 1907 amounting to 21,929 tons of the value of $409,000. There was an increased export of palm-leaf hats, the total value last year reaching $370,000.

GOLD AND SILVER PRODUCED—IMPORTS OF ALL KINDS.

Production of gold in the last fiscal year was to the value of $17,793,000, an increase of $78,000 over the preceding year. Silver was produced to the value of $37,515,000; but the exports of silver aggregated in value $48,597,000, which included Mexican coin to a large amount. The imports during the year 1906–7, as compared with those of 1905–6, were as follows:

Articles.	1906–7.	1905–6.
Animal substances	$9,360,314	$7,941,734
Vegetable substances	15,441,769	15,852,264
Mineral substances	40,329,547	44,160,203
Textiles	12,895,588	11,024,720
Chemical products	4,626,557	3,759,166
Spirits and liquors	3,550,711	3,535,425
Paper, etc	2,933,064	2,646,364
Machinery	13,497,598	9,932,871
Vehicles	4,379,996	2,236,230
Arms and explosives	1,901,789	2,006,390
Miscellaneous	4,649,337	3,969,054
Total	113,566,270	107,064,421

The most important increase in imports during the year was that of machinery and apparatus of all kinds, while the next in importance was of vehicles, due probably to the large orders for automobiles and heavy carts placed in foreign markets. The second secretary of the British legation in Mexico in reporting on the imports says: "The value of the goods purchased abroad must have exceeded the value of those imported in the previous year by at least $15,000,000, a value which has influenced the present financial situation of the country and added to the general stringency of money."

There was an increase of 16 per cent in the number of passengers carried on the railways, and an increase of 30 per cent in the value of the passenger traffic; and an increase of 6 per cent in the number of tons of freight carried and of 9 per cent in the value of the freight.

There was a surplus of Government revenue over ordinary expenditure in the last fiscal year of $14,210,000, which was the largest during the last ten years. There was a decrease of $5,500,000 in nondutiable imports and an increase of $11,679,000 in the dutiable imports as compared with the previous year. The decrease in nondutiable imports is explained by the British secretary of legation by the fact that although $23,000,000 worth of gold and silver coin minted in the United States were imported into Mexico in the fiscal year 1907, yet this sum was far inferior to the amount minted and imported in the previous year.

EXPRESS SHIPMENTS FROM UNITED STATES.

CONSIGNEES ANNOYED BY ADDITIONAL CHARGES ON PREPAID GOODS.

Consul-General A. L. M. Gottschalk, of Mexico City, invites attention to the fact that his office is frequently in receipt of complaints from persons in the United States who, having intrusted to some American express company goods for forwarding to Mexican points, discover that after many weeks the goods have not been received by the consignees. He therefore explains the difficulties involved and how they may be overcome:

Although the goods may have been sent "expressage prepaid" from the United States, the consignees in Mexico justly refuse to pay the local charges at the Mexican end of the line or to receive the goods.

In a country like the United States, where so many firms advertise that they will sell goods on monthly installments or subscription, delivering them to the purchaser, "all charges prepaid," it would be well that shippers, as well as the American living abroad, understood that trade between nations, "international" or "export" trade, can not be carried on in the same fashion as between towns in the States, and that they should not ignore such rudimentary requirements as those of the consular invoice, the payment of import duties in foreign lands, local municipal charges in foreign cities, etc.

Certain express companies in the United States would do well to inform themselves as to the local laws and customs of Mexico before allowing their customers to believe that they have "prepaid all charges" on express packages which are being sent to Mexico. The acceptance of such a commission on the part of an American express company amounts almost to a misrepresentation. The shipper, after such an assurance, writes in all good faith to his consignees that he has "prepaid all charges;" the consignee in this country on being confronted with the bills for freight from the American frontier to the point of delivery, duties, stamp charges, certificates of origin, internal revenue, or storage (through the American shipper's delay to send down original bills of lading), naturally refuses to accept the goods; and everybody concerned writes indignantly to the consulate-general.

The matter would seem to be a particularly important one, as a great number of firms in the United States who desire trade with Mexico make it a practice to ship samples by express to firms or persons in the country who naturally have no desire to pay charges for the privilege of examining American goods.

PORT OF TAMPICO.

ITS GROWING IMPORTANCE AS A SHIPPING AND RAILWAY CENTER.

The following information concerning the effects on Tampico of the merging of the two great railway systems of Mexico, and on direct trade from the United States to the City of Mexico, is furnished by Consul P. Merrill Griffith:

The final arrangements for the merging of the Mexican Central and Mexican National railways was a most important transaction, the future beneficial effects of which on the port of Tampico will be vast. The natural maritime and inland advantages, together with

the expenditure of several millions of dollars in dredging, building jetties, and the construction of practical and convenient custom-houses and wharves, equipped with all the modern improved facilities for handling freight and cargoes, have already converted Tampico into one of the most important shipping and distributing ports of Latin-America. Nearly a million tons of freight were handled at this port during the year 1907, and the imports and exports are constantly increasing.

The immediate effect of the merging of these two systems will be the resumption of work on the Short Line, which, during the progress of these negotiations, has been temporarily suspended, and the subsequent opening of which to traffic will bring Tampico within ten hours of the City of Mexico, a fact significant in itself to all shippers and those interested in the commerce of this country.

Another result of the agreement referred to will be the enlargement of local terminal facilities and other improvements necessary to handle the increasing tonnage. Later on the extension of a branch road from Tampico, through the State of Tamaulipas, to Matamoros—now being discussed, and for which a concession is said to have already been granted—to connect with the St. Louis, Brownsville and Mexico Railroad, will make the shortest international route, via Houston, Matamoros, and Tampico, from all the central and eastern markets of the United States to the City of Mexico.

SADDLERY AND HARNESS.

ACTIVE DEMAND—CHARACTER OF GOODS MOSTLY USED.

In the following report from Tuxpam, Consul A. J. Lespinasse points out the opening in Mexico for the more extensive sale of American saddlery and harness:

If systematically and periodically canvassed by competent Spanish-speaking salesmen, Mexico undoubtedly offers an excellent field for the sale of saddles of all descriptions and their accessories such as stirrups, girths, saddlebags, saddletrees, saddlepads, halters, cart collars, saddle blankets, riding quirts, and a variety of other articles in this line.

As the duties on saddles are high and pay according to weight, they should be constructed as light as consistent with strength and durability. The style of saddle mostly in use here among the cheaper grades is the Texas type with hide-covered horn, wooden stirrups, leather fenders, and plain open saddletree hide covered; these saddles retail here from $25 to $35, Mexican. (Mexican dollar or peso= about 50 cents, American.)

Among the better class the Mosby and McClellan styles are in most demand and retail from $50 to $75 Mexican, according to workmanship and fancy trimmings. A finer grade with expensive trappings would meet with a limited sale in the larger and wealthier centers of Mexico.

Duties on saddles if not adorned with precious metals are $2 Mexican the legal kilo (kilo=2¼ pounds); if adorned with gold, silver, or platinum, $6 Mexican the legal kilo. Cart and truck harness would meet with a limited sale here. The articles most in demand would be cart saddles, collars, traces, bridles, breeching, hames, bits, etc. The duties on harness are $2 Mexican the legal kilo.

TRADE IN FOOTWEAR.

AMERICAN SALES GROW WITHOUT CANVASSING OR SOLICITATION.

Consul Luther T. Ellsworth, of Ciudad Porfirio Diaz, calls attention in the following report to the excellent opening for the extension of the sale of American footwear in Mexico:

The sum of $149,670 was invested in American shoes and boots in 1907 by the dealers in this part of the country. It was the merited reputation of these articles that delivered, almost free of expense, this trade to manufacturers and dealers of the United States. The representatives of American manufacturers and dealers in footwear rarely visit this district, but the quality and style of their product introduced here has given such excellent satisfaction that this trade has been secured almost without solicitation.

Mexicans dress their feet as well as their means will permit, some paying $8 to $16 (Mexican dollar or peso = 50 cents American) per pair for shoes or boots, and even the laboring people of this part of Mexico wear good qualities. American footwear has merited so much attention and so pleased the people here that they now demand it, regardless of price, which is necessarily high because of the Mexican duties of from 35 cents to $1.50 American currency per pair, according to size. It is stated that the dealers now cross the Rio Grande and purchase their stock of the American dealers in Texas; therefore, it may be confidently stated that the present trade can be increased if given the proper attention.

WALL-PAPER MARKET.

GERMAN MANUFACTURERS ADVISED TO COMPETE FOR THE TRADE.

Consul William C. Teichmann, of Eibenstock, reports that a leading German export journal contains a strong recommendation to German wall-paper manufacturers to utilize the present unusual trade opportunities in this product in Mexico. A translation of part of this article is as follows:

If German manufacturers send the right kind of samples to Mexico, but only in original-size pieces, they may surely count on good orders. Particular attention should be paid to the Mexican climatic conditions with tropical heat and moisture, both existing there, and also that the temperature frequently falls nearly 50° F. Therefore colors which fade rapidly, or may be otherwise sensitive, must not be offered. Loud colors with soft shadings are popular in Mexico. A uniform taste does not prevail in that country, therefore as much variety as possible in style, color, and design is recommended. In this respect the capabilities of the European manufactories may be especially emphasized in comparison with the American competition.

A firm at Altona-Ottensen has already gained a foothold through Hamburg exporters. There are several Hamburg exporting houses thoroughly familiar with Mexican trade, having been engaged therein for many years.

We learn that quite acceptable prices are paid in Mexico for wall paper. Interest is also shown there for linerusta, colored glass paper (buntglaspapier), linoleum, and paper stucco, particularly for linerusta, which could become a great article there.

The American practice of designating not only every series, but also every design and each color by a single code word, should be imitated, so that even small orders, from which easily an active business may develop, can be sent by cable without material expense.

CANADA.

COMMERCIAL PROGRESS.

THE GROWTH IN IMPORTS—FOREIGN CAPITAL IS SOUGHT.

Consul H. D. Van Sant, of Kingston, contributes the following information concerning Canadian foreign trade and development:

Canada imported from the United States in 1905 56,000,000 pounds of cotton of the value of $5,500,000, and from other countries 500,000 pounds of the value of $67,000. In 1907 the cotton imports from the United States reached 72,000,000 pounds of the value of $8,000,000; from other countries 234,000 pounds, value $29,620.

The following quantities of hard coal were imported in 1907: From the United States, 2,756,332 tons; from other countries, 28,539 tons.

Pulpwood exported from Canada to the United States in 1905 amounted to 593,624 cords, valued at $2,600,814; in 1907, 628,744 cords, valued at $2,748,901.

To secure British capital, not only for the large demands of the railway builders, but also for the smaller demands of the manufacturer and factory and house builder is a movement which the Canadian Manufacturers' Association has undertaken. For this purpose the association will seek to persuade British loan companies to establish branches here.

The winter has been an exceptionally long and dull one among tradesmen and retailers generally in Kingston. In some of the larger stores preparations are being made to replenish the depleted stock. American dealers in all staple goods used in the retail trade will find a market here for a limited amount of goods of various kinds, hardware, drugs, staple groceries, cotton goods and fabrics, millinery, plated ware, tailor-made clothing, windmills, wire fencing, fancy goods and toys, tinware, and household goods. Taken in connection with other cities and towns it would pay to send commercial men early.

HARBOR OF MONTREAL.

INCREASING TONNAGE AND COMMERCE THROUGH THE ST. LAWRENCE RIVER.

The following information concerning the tonnage and commerce of Montreal, and the improvements in the harbor and approaches thereto, is supplied by Vice-Consul-General Patrick Gorman, of that city:

Montreal possesses a dock frontage of 10 miles, to which cars of all railways coming to the city—and all trunk railways in Canada connect directly with its harbor—have equal access, the rails being so laid that freight can be delivered from cars at ship's side and into sheds direct from the ship's hold, and vice versa. It is situated at the head of Canadian ocean and St. Lawrence navigation, 1,000 miles inland from the sea, and at the entrance of the Canadian system of canals, which connect with the Great Lakes by a 14 to 22 foot waterway that extends to the head of Lake Superior.

A 30-foot channel brings the ocean navigation to Montreal docks. There are no tidal fluctuations in the harbor, and in the central basin

is still water. Twenty-seven per cent of the total commerce of Canada comes and goes via the St. Lawrence and Montreal. The tonnage of the largest ocean vessels coming to Montreal has more than doubled in ten years.

The depth of the St. Lawrence between Montreal and Quebec—originally 10 feet—has been increased by dredging to 30 feet, at a cost of $10,000,000. Nine powerful dredges were in operation last summer, and it is expected that the channel will be dredged by the Canadian government to a depth of 34 feet. The harbor of Montreal is closed during a winter season of five months, during which the business goes to other ports, a large share to Boston, some to Portland, Halifax, and St. John, New Brunswick.

ALASKA.

SLIGHT FALLING OFF IN TRADE LAST YEAR OWING TO LABOR TROUBLES.

Clarence L. Hobart, collector of customs for Alaska, in his report for the calendar year 1907 states that compared with 1906 the general business of Alaska shows a falling off. The total business for the past three years was as follows:

1905	$39,159,772
1906	52,180,537
1907	48,425,330

The decrease for 1907 is accounted for mainly by reason of the merchants overstocking in 1906, and by decreased gold production in 1907. Compared with the Philippine Islands and Porto Rico the trade for the year was as follows:

Philippine Islands (December estimated)	$67,821,684
Porto Rico (December estimated)	57,307,808
Alaska	48,425,330

Eliminating the foreign trade and taking only receipts and shipments to and from the United States, the comparison shows approximately as follows:

Philippine Islands	$23,000,000
Porto Rico	49,500,000
Alaska	45,609,947

The gold production for 1907 is stated by the collector to be about $2,000,000 short of 1906. This is mainly explained by labor troubles and miners' strikes. The total shipments of Alaskan products to the United States and foreign countries were as follows:

Articles.	1906.	1907.
Copper ore and matte	$1,724,505	$1,539,120
Fish:		
Fresh, other than salmon	236,065	172,364
Cured, other than salmon	199,157	208,464
Salmon, canned	8,449,360	7,721,749
All other salmon	273,756	352,957
Fish guano	32,615	21,196
Fish oil	32,408	45,500
Furs	644,936	501,255
Gypsum	17,400	72,965
Tin ore and concentrates	22,125	24,215
Whalebone	367,852	137,939
Other merchandise	547,245	730,850
Gold (manifested)	18,707,045	11,911,882
Gold shipped by mail (estimated)		5,000,000
Total	31,254,469	28,440,462

There were a number of new gold discoveries during the last year, which are said to be very promising.

SALVADOR.

FURNISHING GOODS AND NOVELTIES IN DEMAND IN CENTRAL AMERICA.

Consul-General Samuel E. Magill advises that there are several stores in San Salvador carrying general lines of furnishing goods and novelties which do a good business, whose trade is desirable, and which can be reached by the usual efforts required to gain trade in the Salvadorean Republic. He therefore gives the following trade pointers:

An investigation of their several stocks and country of purchase develops that the following American goods are represented: Felt hats, suspenders, certain makes of perfumes and fancy soaps, phonographs and records, glassware, silver-plated ware, safety razors, fountain pens, children's bicycles, cameras and films, umbrellas, and buttons.

France is represented by perfumes, soaps, cravats, canes, men's hats, umbrellas, curtains, picture postals, silk ribbons, silk floss, partly made dresses, women's bonnets, parasols, towels, and toilet sets.

English goods found are cotton cloth, handkerchiefs, cutlery, lace curtains, and hats.

Germany sells porcelains, mirrors, dolls, cutlery, combs, umbrellas, picture postals, and buttons.

The stores referred to purchase in large quantities, are on the outlook for novelties, and buy in the cheapest market except that, being conducted by Frenchmen, they rather favor French goods.

American hats would be more largely purchased if American manufacturers would pack as many hats to the case as do French and Italian, for there is great saving on import duty through careful packing.

It is difficult to ascertain prices paid in Paris and London for articles which might be purchased in America, and when ascertained such information would be of no great value unless accompanied by accurate description of the article.

Manufacturers of novelties in furnishing goods, useful toys, rubber balls, games, especially ladies' specialties, etc., should send their illustrated catalogues to the list of firms sent herewith [obtainable from the Bureau of Manufactures] and keep them posted as to popular novelties introduced at home.

Traveling salesmen for staple lines might do well with a side line of some novelties, and would usually have abundant time to offer these, as steamers are from eight to twelve days apart in their calls at the principal port of Salvador.

SILVERWARE, WATCHES, CLOCKS, AND PLATED GOODS.

There are only three jewelry stores in San Salvador. The class of goods on sale and the countries from which imported are about as follows:

Solid silver articles consist chiefly of fruit spoons, cups, hand mirrors, napkin rings, toilet articles, etc., and are purchased principally from American manufacturers because of the fineness of design and workmanship. The only criticism made by the trade here is that they are too heavy; a lighter article of the same designs and finish

which would be cheaper would find a readier sale and be just as satisfactory to the purchaser, as such articles are bought chiefly for presents, and the question of durability is of less importance than that of appearance.

The United States and Germany furnish plated ware in about equal amounts, that from the former being preferred on account of quality. In the matter of cost there is little or no difference; therefore it is only to have variety of style for the retail trade that purchases are made in both countries.

PREFERENCE FOR AMERICAN TIMEPIECES.

American and Swiss watches are purchased in about equal numbers, as the retail trade seems equally divided between the two makes. The dealers state that they prefer to sell the American watch, for the reason that when repairs thereon are necessary the broken parts can be more easily replaced, for parts of American watches can be purchased in quantities, while those of Swiss watches can not.

Clocks come from the United States on account of the better quality of the works. This is true of both those with wooden and fancy metal and glass cases. A few German clocks are carried on account of novel designs in the cases, but in all other points American clocks appear to excel, and they seem also to be less affected by seismic disturbances, so common here.

Gold-plated buttons, cuff buttons, scarf pins, with and without stones, come from Austria, whose dealers offer a variety of style at prices less than those offered by American houses. Pens, plated pins, and patent buttons are purchased in the United States because they are regarded as better and cheaper. Plated watch chains are largely of German make because cheaper, and the trade here demands low-priced goods in that line.

OTHER ARTICLES—PACKING AND INSURANCE.

Solid gold rings, scarf pins, breastpins, and other solid settings come equally from the United States and Germany, each having certain advantages which make it advisable to keep both kinds in stock. Prices are about the same.

The finer grades of knives and forks are purchased in the United States because of their quality and finish, while in the ordinary and common grades the prices of German goods are lower than those offered by American houses.

Eyeglass crystals are entirely of American make, because of quality and price; eyeglass frames come in equal quantities from Germany and the United States. Although the German frames can be purchased at a lower price, orders placed in the United States are filled more promptly.

Precious stones are purchased in Europe. Fancy porcelain and religious figures and centerpieces for flowers, etc., are of German and Austrian make.

Goods for shipment to Salvador should be packed in cases as light in weight as possible consistent with the safety of their contents, as the import duties are collected on the gross weight of all packages. Orders should be filled exactly as sent and no substituting of articles "equally as good." Insurance should cover all losses, including even robbery.

BOLIVIA.

MARKET FOR AMERICAN GOODS—REMOVAL OF TARIFF DISCRIMINATION.

Special Agent Charles M. Pepper writes from La Paz, February 12, concerning the Bolivian market for textiles and leather goods, and points out how goods from the United States of certain qualities are in demand; also lampware that will meet the peculiar conditions of an elevated climate. He says:

In treating of the Bolivian market for textiles a point upon which some misconception still exists needs to be cleared up. This relates to the discrimination formerly made in favor of Peruvian and Chilean products, under which they were admitted into Bolivia at lower tariff rates than articles from other countries. In consequence, Peruvian cotton goods had an advantage over similar goods from the United States, England, and Germany, while it was the common belief that other textiles which appeared as Chilean or Peruvian exports really had their origin abroad. Under the commercial conventions which Bolivia negotiated with Chile and Peru in 1904 and in 1905 these tariff concessions were abrogated, and since July 1, 1906, all foreign imports have been on the same basis. So in considering the market it is not necessary to analyze prices as affected by tariff discriminations.

Before the treaty placing Peruvian importations on the same footing as those from other countries went into effect the market was flooded with "tocuyos," the coarse, unbleached cottons which were manufactured by the Peruvian mills, some dealers laying in a two-year stock, and most of the stores in La Paz are still drawing on that supply, but this stock has been reduced to the point where replenishment is necessary, and purchases are now on a normal basis. The tariff on cotton goods nominally is 30 per cent ad valorem, but there are many classifications based on weight and fixed appraisal valuations, so that the duties are really specific.

The market has some geographical distinctions. Southern Bolivia and the larger section of the interior, including most of the towns and cities and the tropical regions, secure their importations through the port of Antofagasta. Northern Bolivia, of which La Paz may be said to be the distributing center, imports through Mollendo. The larger market is that supplied through Antofagasta, and it is controlled to some extent by Valparaiso.

DIFFERENT CLASSES OF GOODS NEEDED.

There is also a difference in the quality and classes of goods distributed to the different districts. The Antofagasta importations, reaching as they do the tropical regions of the country, cover the bulk of the lighter fabrics and the prints. The central plateau with its colder climate calls for heavier goods, which are imported through Mollendo. The output of the Peruvian mills that is imported is marketed almost entirely in northern Bolivia, geographical proximity affording some compensation for the loss of tariff advantages. The mills at Arequipa have only to pay the freight 200 miles to Lake

Titicaca and then across the lake, so that naturally they are the chief Peruvian source of supply.

The classes of goods imported from the different countries are so well defined that the competition at present is not very marked except between English and German prints. The "tocuyo" or coarse cloths of the Peruvian mills have now come to have a general trade significance, and, as applied to foreign importations, mean all kinds of unbleached cottons. I am assured by large importers that American "tocuyos," after a hard fight lasting several years, now have a permanent position in the Bolivian market. It is one of the rare instances in which they have secured an advantage over Manchester. The Indians of the plateau want a very coarse article, heavy to the touch, and this is supplied by the Peruvian tocuyo. The medium finish of the Manchester mills is not liked. The larger call is for tocuyos with a good finish, and the American mills furnish a better finish than the English mills. It is this finish which has established the demand for them.

THE MARKET FOR AMERICAN COTTON GOODS.

An estimate given me of the importations of tocuyos during the present year, assuming fairly favorable trade conditions, is as follows: From the United States, 8,500 bales; Great Britain, 4,000 bales; Peru, 2,500 bales. This should dissipate the notion that there is no market in Bolivia for American cotton goods. Gray domestics find special favor in the northern section, and drills and flannels from the New England mills are well displayed.

Some of the mills of the southern part of the United States have tried to introduce their prints, but it has to be stated that their efforts have not met with encouragement. Importers say that in price, pattern, style, and design, but especially in price the southern mills have not been able to meet the Europeans. The line of future growth therefore seems to be chiefly in supplying the unbleached goods which are satisfactory both as to cheapness and quality. Some of the importing firms which handle American goods are interested in the Peruvian cotton mills, so that their judgment on this point may be taken as conclusive. The bleached goods which some of the Peruvian mills are now turning out are so far from supplying the home demand that no attempt has been made to put them on the Bolivian market.

ENGLISH AND GERMAN COMPETITION.

The trade in prints continues largely in the hands of Manchester, though German competition in supplying inferior and more gaudy goods is making itself felt, and prints make up a profitable share of the importations of cottons from Germany. Notwithstanding that the German goods wear out so much sooner, the Indians seem satisfied with their attractiveness and cheapness when purchased. Importations from Germany also include many cotton mixtures sold as woolens. The fine native wool is spun and woven by the Indian women on primitive looms into shawls for themselves and ponchos for the men, and these articles of native product heretofore have had a valuable domestic market. But Germany is now supplying shawls and ponchos of cotton and wool, dyed more brilliantly than the native article and very hard to distinguish from it

in texture. One dealer who had been supplying interior points with native shawls and ponchos discovered that three-fourths of his stock was of German make.

Colored shirtings from Germany of a fair quality are sold at a price which insures an active demand. In hosiery, both the cheap and brilliantly dyed and the better grade, Germany has the lead, competing in the former with the bright yarns of the fine native wools. Cheap colored German handkerchiefs also lead. In a cheap grade of cloths for men's wear used by the Indians Manchester is now beginning to compete with Germany. Felt hats, which are worn almost universally by both the men and the women of the Indian class, are imported from the district in Austria that is noted for this class of manufactures. Finer hats are supplied from England and Germany, but their sale is not large.

In carpets, for which there is a fair demand, England has the advantage. The market for fine dry goods is limited to the wealthier classes of La Paz, Sucre, Cochabamba, and the other cities, yet the aggregate is not inconsiderable. This trade is supplied by France, Germany, and England, the United States not being a factor in it.

LEATHER GOODS—FRENCH HIGH-HEELED SHOES.

The market for leather goods, including boots and shoes, admits of slow growth. The large number of people engaged in pack animal transportation calls for various forms of saddlery and crude harness, much of which is of local manufacture from imported tanned leather. A popular and largely used article of home make is the petaca, or rawhide trunk, which is so essential in mule-back travel throughout the country, two petacas usually being so arranged as to provide one pack animal's cargo. But this industry is small compared with the making of footgear.

The bulk of the native Indian population contents itself with a rude sandal consisting of little more than a sole of untanned leather, which has to be very durable to resist hard tramping, particularly in the season of the snows and rains. In the towns and cities a larger proportion, when not going barefoot, manages to buy the primitive handmade shoes. The women of the Chola or Indian class have created a demand for an article of much better quality. French high-heeled shoes, laced above the ankles, are worn by even the poorest, though this class may reserve them for festival occasions. Whether imported or of home manufacture, in which much skill has been developed, the price ranges from $10 to $12 gold, so that for very many of the Chola women a pair of shoes is a luxury. But being a luxury does not prevent these women from possessing them. The prevalence of this custom explains why the domestic market is better for ladies' than for men's footwear.

AMERICAN BOOTS AND SHOES IN DEMAND.

The sales of imported boots and shoes are chiefly for men. The buyers are Americans and Europeans and well-to-do Bolivians. Since the presence of so many Americans engaged in railway construction the demand has increased, and this will be one of the means of insuring permanent sales, but for a marked growth of this trade the main reliance, of course, must be on the Bolivian population.

Many of the retail stores in La Paz display signs announcing that American shoes are for sale, the St. Louis make being the most common, though New York factories are also represented.

Prices are high. They run from $8 to $11 for shoes of the quality and style that sell in the United States at from $3 to $4.50 per pair. The valuations in the tariff schedules are on a somewhat arbitrary basis of classification per dozen pairs, but the rate of duty is 45 per cent ad valorem, with a few unimportant exceptions. Dealers also have to take into consideration the frequency with which in the transit along the west coast and in the transshipments cases are broken into and pairs stolen without their being able to recover from either the exporters or the steamship companies.

HIGH PRICES DUE TO EXCESSIVE PROFITS OF DEALERS.

Notwithstanding the high price at which they are sold, the durability of the American shoe is so much greater than that of the native article, and the fit is so much better, that it finds favor, and a purchaser once secured is pretty certain to continue a buyer. The effort of the manufacturer should be directed to persuading the middlemen to forego a portion of their usual 100 per cent profit, and to sell the American shoe at a price which would bring it within the reach of a larger number of consumers. A shoe of fine quality which could be retailed in La Paz and other cities for $7.50 (the $5 shoe of the United States) would have a good sale; a shoe of good quality which could be sold at $5 (the $3.50 shoe of the United States) would have a larger sale. Some of the local dealers display outside their stores the signs sent them from the American factories as advertisements of the $3.50 and $4 shoes, while within they sell them for $8 and $9. The sales, of course, are in the money of the country, and the fact that the boliviano, which is the monetary unit, is worth about 40 cents American gold, distracts attention from the disparity. Some of the importers of textiles also handle boots and shoes, but to secure increased sales it would be desirable for the manufacturers to induce them to place advertising literature in the hands of such of their customers as are retailers.

Many of the Bolivian importing houses are branches or agents of the firms whose headquarters are at Arequipa, and whose addresses were given in the report on the markets of southern Peru. The majority of them also have branches in other cities than La Paz, and some are engaged in both wholesale and retail business. General merchandise is covered by most of them, but those whose names are forwarded are engaged especially in handling textiles.

GLASS AND GLASSWARE.

The market for glass and glassware in Bolivia does not offer encouragement to manufacturers in the United States. Plate and window glass and mirrors are imported in small quantities from Belgium, Germany, and Austria. In proportion to their size, La Paz and the other cities import liberally enough, because fine show cases and windows are a feature of most of the large stores, as are also looking-glasses. Owners of private residences also manifest a fondness for showy mirrors. But while this tendency is marked, the expense of gratifying it limits the aggregate of the purchases. For example, an ordinary store mirror which in the United States might retail for $60, in La Paz fetches $240. Plate glass is proportionately high, as

are ordinary small windowpanes, though the latter have to be used in the majority of the dwellings, since the climate is not tropical enough to dispense with them. In addition to freight charges the breakage due to the numerous transshipments and the crude methods of handling forms a heavy cost item. The notoriously bad packing of American manufacturers would give them little chance of a market under such conditions, but there are other considerations which make them indifferent to it. Almost without exception glass is imported on consignment, and with nine to twelve months credit for sales made. There are three dealers in Lima who secure these terms from European exporters. No American exporter will give them.

AMERICAN LAMPS AND LAMP WARE—RAILWAY CONSTRUCTION.

In lamps and lamp ware manufacturers in the United States are able to make sales in competition with Austrian lamps. One well-known American lamp with nickel finish is in fair demand. Hanging lamps are quite popular and are found in many residences. Bolivia depends almost entirely on kerosene for illuminating purposes, so that the demand for chimneys is a constant one. It is enhanced by the atmospheric conditions at altitudes ranging from 10,000 feet upward, which cause breakage by very slight expansion and contraction. Pittsburg manufacturers appear to meet the requirements by providing a chimney that shows a maximum of durability and a minimum of loss under these atmospheric conditions, and their wares have an established demand. The Bolivian tariff on window glass, plate glass, mirrors, etc., is 30 per cent ad valorem.

The failure of the Argentine Congress to provide funds for extending the Argentine lines from the boundary at Quiaca, the 55 miles to Tupiza, as provided in the treaty between the two countries, will not stop the work. After the Congress was dissolved by the Argentine executive, the same authority set aside the necessary funds for continuing the preliminary works to Tupiza, and directed that they should proceed. The prolongation of the Argentine lines to the Bolivian border, which was completed in December, will be opened for freight and passenger traffic in April.

[Mr. Pepper sent the names of importers of textile and leather goods at La Paz, which names are on file at the Bureau of Manufactures.]

CHILE.

AMERICAN TRADE OPPORTUNITY.

A GOOD MARKET COULD BE DEVELOPED BY THE PROPER EFFORT.

The following information relative to conditions now prevailing in Chile favorable to increased American trade in that Republic, and the means by which that increase can be secured, is furnished by Consul Alfred Winslow, of Valparaiso:

Newspapers of the United States are making reference to proposed expositions for American goods to be held in some of the more important South American cities. There is no question that this would be a great move toward getting our portion of the trade from this part of the world, which has been so much neglected. This, followed up with personal work and better mail and freight facilities, will

accomplish wonders and pay well for the effort. The producer must get in closer touch with the consumer, and show what is best. As a general thing, the importer is well posted, but he buys what the consumer asks for, rather than go to the trouble of introducing a new article. This is especially true where it is to replace goods of his own country's production, as is generally the case in Chile, where there are but few American merchants.

Now is a particularly favorable time to make such a move for the business of Chile, since there is a business depression at present and all merchants are allowing their stocks to become greatly reduced. It will be necessary to restock within six or eight months, when American interests should be in the field. If it is not practicable to get the proposed American commercial exposition here in working order within that time, it will pay well to cover this field personally, for when business revives it will be easier to introduce new wares than when business is at high pressure.

These expositions and the personal work must be followed by quicker mail and better freight facilities, if the trade is to be held. This is important and should have the prompt attention of exporters. Valparaiso is only about 5,000 miles from New York, but it requires from seventy to eighty days to get a reply to a business letter, and to get an order filled and delivered generally takes from five to six months, when it should be accomplished in one-half the time, as is the case from Europe.

All of this work will be of little avail unless great care is taken in supplying just what is ordered and in seeing that it is well packed. The cases should not be very large, and should be made of tough boards, well bound with strap iron. Everything should be so packed that nothing can shake about in the case or rub together. Plenty of hay, straw, or excelsior should be used. It will add but little to the freight bills and will do much to protect the most breakable wares.

Another important agency in holding the trade in South America would be several well-connected branches of a strong American bank, with headquarters at New York, through which the financial transactions could be made instead of through foreign houses. This is important and it seems might be developed by the same interests that have the exposition matter in hand.

PRESENT TRADE CONDITIONS.

EFFECTS THEREON OF UNFAVORABLE INTERNATIONAL EXCHANGE.

The following information concerning the imports, exports, and customs receipts of Chile is furnished by American Minister John Hicks, of Santiago, from a report issued by the Chilean treasury department:

The imports and exports of Chile in 1907 show an increase of 6,089,109 gold pesos ($2,516,079) as compared with the 1906. The increase would undoubtedly have been much greater not been for the crisis which came upon the country during of October, the paralyzing effects of which are still being

Because of the extremely unfavorable character of the exchange (the value of the paper peso dropping from to 8 pence, or 26 to 16 cents, in a short period),

houses countermanded all their orders for foreign goods, and are only just beginning with the new year to think of starting goods for Chile again. This situation is reflected in the custom-house figures for the month of December. There is a decrease in the receipts for imports of 1,880,908 gold pesos ($677,127) as compared with the month of December, 1906, and in the receipts of export duties of 1,419,354 gold pesos ($510,967), a total decrease of 3,300,262 gold pesos ($1,188,094) as compared with December, 1906.

The total customs revenue for 1907 reached the sum of 120,305,348 gold pesos ($43,309,925, against 113,316,239 gold pesos ($40,793,846) in 1906, an increase of 6,989,109 gold pesos ($2,516,079).

All the duties in the Chilean tariff are fixed in pesos of 18 pence (36 cents American), but, according to the financial law passed in August, 1907, the importer or exporter may pay the customs duties in paper money valued according to the international rate of exchange. It was hoped that this might very materially reduce the demand for drafts on Europe, and had it not been for certain disturbing factors in the trade situation which caused the present crisis, the considerably increased demand thus created for the paper money might have worked favorably upon the international value of the paper peso. As it was, the business stagnation of the past three months disturbed all the calculations of the legislators.

BRAZIL.

MARKET FOR CONFECTIONERY.

AMERICAN GOODS SHOULD HAVE A SHARE OF THE TRADE.

Consul-General George E. Anderson, of Rio de Janeiro, advises that apparently there is an opportunity for the sale of American confectionery goods in Brazilian cities, which leads him to give the following particulars:

At present there is considerable trade in European confectionery in the larger Brazilian ports, and the imports consist almost altogether of French goods, though the lines of English candies in tin and glass sold over the world generally have considerable vogue among foreign residents. Brazilian consumers seem to prefer French goods, and Brazilian manufacturers follow the French styles in such goods. The amount of candy consumed in Brazil is very high, considering its price and the large proportion of it which is of high grade. The imported stock comes in highly decorated packages, carefully wrapped piece by piece, and with the larger packages in tin. Candied fruits, creams, and hard candies and various forms of chocolate make up the bulk of the goods. The best grade of Brazilian-made chocolates can be had by the kilo (2.2 pounds) or half kilo at retail at 8 milreis per kilo, about $1.09 per pound. Hard candy of fair grade sells at retail for 2.4 milreis per kilo, or about 33⅓ cents per pound. The tariff on such goods is 3 milreis a kilo, or about 53 cents per pound, gross. Imported goods sell higher than Brazilian made.

American candies, where they are known, are popular and would find ready sale with proper pushing. It will pay American confectioners now in the foreign field to cultivate the markets here by

trying to get local representation, probably best through agents representing other lines at the same time. In the way of correspondence it may be profitable to write a number of firms in Rio de Janeiro. [A selected list forwarded by the consul may be secured from the Bureau of Manufactures.]

There ought to be an opportunity to cater to the foreign element in Brazil and secure a foothold for American goods in this manner. Some study of special needs of the market should be made, goods should be well packed, generally in tins, and careful attention to steamship services will be necessary.

TAX ON TRAVELING SALESMEN.

COMMERCIAL TRAVELERS TO BE CHARGED LESS IN BRAZILIAN CITY.

Consul George H. Pickerell reports that the municipal chamber of the Brazilian city of Para has recently authorized a reduction in the tax levied upon traveling salesmen (Caixeiros Viagantes), concerning which he says:

The reduction is to be effective up to and including December 31, 1908. The new tax amounts to about $100, which with the percentage charged for hospitals, stamps, and other fees, brings the total charge to $118. I would especially warn traveling men not to try to do business until after they have secured their license, as the penalty for evasion is confiscation of samples, together with a heavy fine, accomplished through the court. I would also advise travelers contemplating a visit to this region, that business is rather dull and purchases are only for immediate account. However, this should not deter anyone from making the trip; now is a good time as merchants are able to look at samples, and the new prices afford a better opportunity to compete.

COLOMBIA.

AMERICAN TRADE LOST THROUGH INATTENTION TO ORDERS.

Consul Isaac A. Manning, of Cartagena, presents another complaint against the unwise methods of some manufacturers and exporters in the United States in their dealings with Colombian merchants. He says:

That the complaint is a just one I am satisfied, and that it is based on methods which undo in one shipment the results of work of months by members of the consular service, and others working abroad in the interest of American foreign trade. A merchant here had been buying his felt hats in England, but decided to try a shipment from the United States. He placed his order through a commission house in New York, directing that he be sent hats of certain colors, and that they be packed in a light crate, after being compactly nested.

When the shipment, amounting to six dozen hats, reached the merchant here, they were found to be in colors which seemed to meet the ideas of the manufacturer, but not the colors ordered by the merchant here, nor in colors satisfactory to his trade, and instead of being packed in a light crate were packed in a heavy box. The hats were also loosely nested, and the result was they cost the importer

here $20.70 more in freight and duty than they should have cost. This was on a shipment of hats valued at $79.80.

SUPERIOR BRITISH METHOD—POINTS TO OBSERVE.

To show the comparison between the English and American packing, the same importer recently bought 15 dozen hats from England. The weights and measurements are given as follows:

From England, 15 dozen felt hats crated in an open crate measuring 28 cubic feet, weighing 112 pounds.

From United States, 6 dozen felt hats packed in a case measuring 25½ cubic feet, weight 95 pounds.

On making reclamation, the importer called attention to his instruction as to packing, and the house manufacturing the hats wrote back that they could not pack in a crate because the steamship companies would not accept goods packed thus. This I am informed is not true, for goods of this character come constantly from Europe packed in this manner by a line belonging to the same company as the line which operates between here and New York.

The importers of goods believe that they have a reasonable right to know what they want, and a right to instruct exporters as to how goods should be packed and shipped. When manufacturers in the United States begin to study the demands of these countries and to attend to shipping instructions, as well as to give what is ordered and not try to send something else "just as good," they will do more to get the Spanish-American trade and to hold it than has yet been accomplished. This matter of packing is as important as is the supplying of the goods ordered. When American manufacturers take time to consider the difference between ad valorem and specific duties they will realize this. In most Spanish-American countries the principal duties are assessed on the weight of the goods, including all packing.

This is why the English, German, and French manufacturers pack all piece dry goods in bales instead of boxes. The bale packing can readily be made waterproof and a saving is made on freight, in weight and measurement, and on duties.

ITALY.

REVIEW OF TRADE CONDITIONS.

LARGE MARKET FOR AMERICAN PRODUCTS IF PROPERLY EXPLOITED.

The following report concerning the commercial outlook in the Milan district, and relatively in all Italy, for 1908, and what American manufacturers and exporters should do to fully exploit the opportunities which the market offers is furnished by Consul James E. Dunning, of Milan:

A quieter year is in prospect, in contrast to the intense activity of the two previous seasons, during which the industrial movement in the northern provinces took on an aspect of decidedly American cast. While the American exporter may still look to Milan as an unusually profitable field for his efforts, the abatement in those large orders for machinery and machine tools which characterized both 1906 and 1907 must affect the totals when the end of 1908 is reached. The year,

apparently, will be one of very conservative progress. This condition should be kept in mind by the American manufacturer who intends entering the territory or broadening his hold upon it. It is an exceptional time, not for relinquishing or suspending effort, but for organizing it and giving it direction.

There is a general feeling that production has been overdone here in the last two years. The sudden financial shrinkage in the autumn of 1907, coincident with that in the United States and elsewhere, found not only considerable overstocks of goods in many lines, but stopped production and delivery at a time when practically all manufacturers of importance were producing as heavily as possible in order to cover themselves on their large expenditures of capital for increased plant. The expansion of manufacturing interests was being paid for in increased production when interrupted at the very height of the compensating process. As a result there has been a rapid reduction of construction plans and exploiting campaigns throughout the district.

OPPORTUNITIES FOR AMERICAN EXPORTERS.

This temporary halt in the tremendous advance of Italian industries, however, does not greatly affect the Milan district as a buyer of small articles. Probably the present caution which pervades the market is more than offset by the increased activity of small agents handling one or several articles on commission bases. At a time when trade, as a whole, is rather slow in movement there appears to be an unusual opportunity to draw attention to a vigorous campaign of introduction on the part of American exporters seeking an outlet in the foreign field.

While the change of trade conditions, just referred to, have affected all large enterprises, the sense of this report is intended to be, as a whole, that American exporters may, with an unusual degree of profit, enter the Milan district in a vigorous campaign of introduction, even on the generally lower basis on which business will most likely be done during 1908. Taking the district as a whole, and considering its tremendous resources and the remarkable advances of its people, the volume of trade within its borders at the disposal of American exporters is much greater than can be realized in the United States. Large as the trade is (about $22,000,000 in 1907, including raw cotton), there is a vast amount still untouched which Americans can have if they will make the effort to get it.

Among the lines which can be increased in volume by proper treatment are: Lead pencils, typewriter ribbons, blotting paper, agricultural machinery, concrete mixers, boots and shoes, leather, envelopes and paper, ink, low-priced typewriters, barber chairs, store furnishings, kerosene stoves, sofa beds, canned goods, pens, linen collars and cuffs, boats and engines, electrical supplies, and particularly copper wire, firearms, bottle-labeling machines, low-priced guaranteed clocks, mechanical floor scrapers, steel ceilings, pumps, farm lanterns, and electrical flatirons and curlers.

MILANESE THE BEST TRADE AGENTS.

It should be understood by the American exporter that the Milan field is already well occupied. It is an interesting example of a ter-

ritory in which nearly every line of American goods has been introduced to a greater or less extent. This condition does not close the way to development, but it heightens the difficulties and renders necessary a highly organized effort, if one is to be made at all.

Not only American goods, but products of England, France, Germany, Austria, and Switzerland are sold in Milan and its dependencies in great numbers. The French, Germans, and Austrians are specially active, and their numerical strength in the population gives them positions of unusual advantage in banking and other arrangements needed by the successful merchant. To offset superiority of natural position, American exporters will find that, almost without exception, the best results are obtained by employing native Milanese agents. Scores of these are uncommonly clever salesmen, are in touch with every sort of trade in the whole of southern Europe, have good bank and other connections, and are specially useful in those personal relationships which are made so much of in the business of this country. Equipped with a good article or group of articles in which they have confidence, and for the sale of which they have been carefully prepared through preliminary correspondence with the American exporter, they are able to canvass the field as Italians to Italians, with all the implied advantage.

Such personal representation will be needed in territory so warmly contested by European competitors. In view of the general failure of catalogue campaigns the consulate at Milan has gone into this matter with care and studied it for several months.

THE CONSULATE FOR PRELIMINARY TRADE CONNECTIONS.

While it is not entirely true that advertising in the English language is worthless in this territory, after studying this part of the case with care, I believe that the ordinary inquiry letter, sent to the consulate with the request that its terms be referred to a list of trustworthy individual agents, is the best form of preliminary connection to be had. This brings the firm's wants directly to the knowledge of this consulate, which has organized a simple system for communicating with representatives desirous of attaching themselves to American houses. With the assistance of the Chamber of Commerce and the Milan Commercial Museum, and by individual effort on the part of members of the consular staff, persons known to be seeking agencies for American or other foreign goods have been listed in the office, and their respective special lines indexed. They have been encouraged to visit the consulate, at more or less regular intervals, and are there supplied with bulletins of American addresses which have reached the consulate in inquiry letters from home. Special inquiries, dealing with explicit demands regarding a single article by a house, whose intention is evident from the tone of its letter, are referred directly to such representatives as are listed for that line. They are invited to come to the consulate for a conference, one at a time and generally after business hours, and are placed in possession of such information as has been sent to this office by the exporter. In this way the consulate learns whether or not the prospective agent can speak and write the English language, and receives from him such suggestions as can best be communicated to the house by the consulate itself. The rest of the matter is left

to the agent, on his agreement to take it up by correspondence without delay.

So far this plan has worked well. The number of Italian agents taking advantage of it is increasing at a good rate.

Houses seeking information from the consulate as to the financial responsibility of agents applying for territory and terms are referred to the commercial agencies in the United States, all of which have branches in Milan equipped to give the most detailed information of this character.

SWINDLERS AT WORK.

As an illustration of a class of agents against which American exporters should be on their guard, one case has been reported of an agent, of no commercial standing, who made a business of borrowing a copy of an American trade journal and sending letters to as many as a hundred advertisers a month, with the aid of an English-speaking clerk whom he employed in the latter's leisure time to make translations. It has been stated that this industrious man received large numbers of samples from the United States from his canvass of the market, and that he derived from their sale an income of from $60 to $100 monthly.

The consulate has found that catalogues, even in English, are of some value in such a system as that outlined above. If the prospective agent is reasonably interested in the inquiry-letter of the American house, his interest is heightened by a well-illustrated catalogue, and his correspondence with the house in initiating relations is bound to be much more intelligent. The consulate has generally found it well to be somewhat reserved in the distribution of catalogues. The Continental houses with representatives in Milan are extremely careful about giving out their detailed catalogues with price lists. Very much better results have been obtained in this office by giving out the catalogue only to persons of sufficient importance to have proved their title to it. The catalogue is of use after the agent has been called on and presented with the inquiry of the home house; but it is of little use to send it unaccompanied by an inquiry-letter, or by something which will explain clearly the firm's intention and need for an intelligent conference with agents interested in a particular line of merchandise.

CATALOGUES SHOULD BE TRANSLATED.

To such firms as are in the habit of sending price lists and discount sheets to the consulate for communication to possible inquirers, and for the use of persons to whom their catalogues may be turned over, it might be said that the value of these lists would be very much increased if they were translated into Italian or French terms. The translation is so simple that the consulate sees no reason why it should not be done; and the measurements, excepting of course in the case of complicated machinery not introduced in this way ought to be in terms of the metric system. Not long ago the consulate was handed a long statement of prices and measurements sent to an Italian firm which was exceedingly anxious to make a large and immediate purchase of the article in question. Both the prices and the measurements were in American terms, and the measurements were so abbreviated that they were unintelligible to the would-be importer.

The service which the consulate performed for the buyer in translating the American terms from cents per foot-pound into francs per kilogram and per meter, required not more than two hours and was not a difficult matter, but this should have been done by the home house. Every Continental exporter to Italy, according to good report, supplies his customers with estimates and statements in Italian terms. The English do not send their terms in shillings, nor the Germans theirs in marks. In a close year attention to this small detail might produce disproportionately good results. It is one of the things which tends to remove the impression, rather potent in Italy, that the local buyer is dealing with a distant foreigner.

AMERICAN VERSUS EUROPEAN CREDITS.

The consulate is familiar with the usual demand for practically cash terms made by American exporters and will not enter into an argument upon the point. It is the fact that Continental exporters to Italy do not exact such terms, while, on the other hand, it is the truth that such exporters are in a situation very different from that of the American, both as to distance and as to the time required in the transmission of documents. There seems to be no way at present for the American exporter to come into the field without taking this stand, which to many Italian agents seems unreasonable; but the consulate believes first, that very much can be done to offset this disadvantage by careful construction and scrutiny of the correspondence sent to Italy on the subject; and second, by using sufficient pains in the choice of agents to secure men who can afford to pay for their orders. Most of the good agents can and will do this if the exporter will give them every opportunity to know exactly what they are buying. In some cases this can be done by correspondence, but the consulate is aware of the difficulty of this method, and realizes that the one right way is to bring the goods directly before the agent at Milan. That can not be done until some effort, not yet organized, has been put into practice to bring American goods here under some system by which the appointment of agents can be initiated by a personal representative of the home house. Under such conditions (and it must be remembered that these are the conditions surrounding the introduction of Continental manufactures) the Italian agent would pay as he went, and the difficulty of terms would be removed.

MISUNDERSTANDINGS BETWEEN EXPORTER AND AGENT.

An illustration of the imperfect understandings which are often allowed to go as the basis for trade between the American exporter and his Italian agent has been afforded in Milan within a year, when an apparently trustworthy and important representative, wishing to take up a group of noncompeting American goods, undertook to correspond with their manufacturers in the English language. He took their addresses from a trade journal, without knowing our language well enough to understand its import in a business letter or in print, and wrote for samples and terms. The goods were sent to him by several houses, with the understanding on his part that they were to be treated as samples and distributed to the trade, he to pay the house, less his commission, such sums as he collected for their sale, if sales resulted. This is a common German method of introducing certain classes of goods. The American houses did not understand

trying to get local representation, probably best through agents representing other lines at the same time. In the way of correspondence it may be profitable to write a number of firms in Rio de Janeiro. [A selected list forwarded by the consul may be secured from the Bureau of Manufactures.]

There ought to be an opportunity to cater to the foreign element in Brazil and secure a foothold for American goods in this manner. Some study of special needs of the market should be made, goods should be well packed, generally in tins, and careful attention to steamship services will be necessary.

TAX ON TRAVELING SALESMEN.

COMMERCIAL TRAVELERS TO BE CHARGED LESS IN BRAZILIAN CITY.

Consul George H. Pickerell reports that the municipal chamber of the Brazilian city of Para has recently authorized a reduction in the tax levied upon traveling salesmen (Caixeiros Viagantes), concerning which he says:

The reduction is to be effective up to and including December 31, 1908. The new tax amounts to about $100, which with the percentage charged for hospitals, stamps, and other fees, brings the total charge to $118. I would especially warn traveling men not to try to do business until after they have secured their license, as the penalty for evasion is confiscation of samples, together with a heavy fine, accomplished through the court. I would also advise travelers contemplating a visit to this region, that business is rather dull and purchases are only for immediate account. However, this should not deter anyone from making the trip; now is a good time as merchants are able to look at samples, and the new prices afford a better opportunity to compete.

COLOMBIA.

AMERICAN TRADE LOST THROUGH INATTENTION TO ORDERS.

Consul Isaac A. Manning, of Cartagena, presents another complaint against the unwise methods of some manufacturers and exporters in the United States in their dealings with Colombian merchants. He says:

That the complaint is a just one I am satisfied, and that it is based on methods which undo in one shipment the results of work of months by members of the consular service, and others working abroad in the interest of American foreign trade. A merchant here had been buying his felt hats in England, but decided to try a shipment from the United States. He placed his order through a commission house in New York, directing that he be sent hats of certain colors, and that they be packed in a light crate, after being compactly nested.

When the shipment, amounting to six dozen hats, reached the merchant here, they were found to be in colors which seemed to meet the ideas of the manufacturer, but not the colors ordered by the merchant here, nor in colors satisfactory to his trade, and instead of being packed in a light crate were packed in a heavy box. The hats were also loosely nested, and the result was they cost the importer

here $20.70 more in freight and duty than they should have cost. This was on a shipment of hats valued at $79.80.

SUPERIOR BRITISH METHOD—POINTS TO OBSERVE.

To show the comparison between the English and American packing, the same importer recently bought 15 dozen hats from England. The weights and measurements are given as follows:

From England, 15 dozen felt hats crated in an open crate measuring 28 cubic feet, weighing 112 pounds.

From United States, 6 dozen felt hats packed in a case measuring 25½ cubic feet, weight 95 pounds.

On making reclamation, the importer called attention to his instruction as to packing, and the house manufacturing the hats wrote back that they could not pack in a crate because the steamship companies would not accept goods packed thus. This I am informed is not true, for goods of this character come constantly from Europe packed in this manner by a line belonging to the same company as the line which operates between here and New York.

The importers of goods believe that they have a reasonable right to know what they want, and a right to instruct exporters as to how goods should be packed and shipped. When manufacturers in the United States begin to study the demands of these countries and to attend to shipping instructions, as well as to give what is ordered and not try to send something else "just as good," they will do more to get the Spanish-American trade and to hold it than has yet been accomplished. This matter of packing is as important as is the supplying of the goods ordered. When American manufacturers take time to consider the difference between ad valorem and specific duties they will realize this. In most Spanish-American countries the principal duties are assessed on the weight of the goods, including all packing.

This is why the English, German, and French manufacturers pack all piece dry goods in bales instead of boxes. The bale packing can readily be made waterproof and a saving is made on freight, in weight and measurement, and on duties.

ITALY.

REVIEW OF TRADE CONDITIONS.

LARGE MARKET FOR AMERICAN PRODUCTS IF PROPERLY EXPLOITED.

The following report concerning the commercial outlook in the Milan district, and relatively in all Italy, for 1908, and what American manufacturers and exporters should do to fully exploit the opportunities which the market offers is furnished by Consul James E. Dunning, of Milan:

A quieter year is in prospect, in contrast to the intense activity of the two previous seasons, during which the industrial movement in the northern provinces took on an aspect of decidedly American cast. While the American exporter may still look to Milan as an unusually profitable field for his efforts, the abatement in those large orders for machinery and machine tools which characterized both 1906 and 1907 must affect the totals when the end of 1908 is reached. The year,

apparently, will be one of very conservative progress. This condition should be kept in mind by the American manufacturer who intends entering the territory or broadening his hold upon it. It is an exceptional time, not for relinquishing or suspending effort, but for organizing it and giving it direction.

There is a general feeling that production has been overdone here in the last two years. The sudden financial shrinkage in the autumn of 1907, coincident with that in the United States and elsewhere, found not only considerable overstocks of goods in many lines, but stopped production and delivery at a time when practically all manufacturers of importance were producing as heavily as possible in order to cover themselves on their large expenditures of capital for increased plant. The expansion of manufacturing interests was being paid for in increased production when interrupted at the very height of the compensating process. As a result there has been a rapid reduction of construction plans and exploiting campaigns throughout the district.

OPPORTUNITIES FOR AMERICAN EXPORTERS.

This temporary halt in the tremendous advance of Italian industries, however, does not greatly affect the Milan district as a buyer of small articles. Probably the present caution which pervades the market is more than offset by the increased activity of small agents handling one or several articles on commission bases. At a time when trade, as a whole, is rather slow in movement there appears to be an unusual opportunity to draw attention to a vigorous campaign of introduction on the part of American exporters seeking an outlet in the foreign field.

While the change of trade conditions, just referred to, have affected all large enterprises, the sense of this report is intended to be, as a whole, that American exporters may, with an unusual degree of profit, enter the Milan district in a vigorous campaign of introduction, even on the generally lower basis on which business will most likely be done during 1908. Taking the district as a whole, and considering its tremendous resources and the remarkable advances of its people, the volume of trade within its borders at the disposal of American exporters is much greater than can be realized in the United States. Large as the trade is (about $22,000,000 in 1907, including raw cotton), there is a vast amount still untouched which Americans can have if they will make the effort to get it.

Among the lines which can be increased in volume by proper treatment are: Lead pencils, typewriter ribbons, blotting paper, agricultural machinery, concrete mixers, boots and shoes, leather, envelopes and paper, ink, low-priced typewriters, barber chairs, store furnishings, kerosene stoves, sofa beds, canned goods, pens, linen collars and cuffs, boats and engines, electrical supplies, and particularly copper wire, firearms, bottle-labeling machines, low-priced guaranteed clocks, mechanical floor scrapers, steel ceilings, pumps, farm lanterns, and electrical flatirons and curlers.

MILANESE THE BEST TRADE AGENTS.

It should be understood by the American exporter that the Milan field is already well occupied. It is an interesting example of a ter-

ritory in which nearly every line of American goods has been introduced to a greater or less extent. This condition does not close the way to development, but it heightens the difficulties and renders necessary a highly organized effort, if one is to be made at all.

Not only American goods, but products of England, France, Germany, Austria, and Switzerland are sold in Milan and its dependencies in great numbers. The French, Germans, and Austrians are specially active, and their numerical strength in the population gives them positions of unusual advantage in banking and other arrangements needed by the successful merchant. To offset superiority of natural position, American exporters will find that, almost without exception, the best results are obtained by employing native Milanese agents. Scores of these are uncommonly clever salesmen, are in touch with every sort of trade in the whole of southern Europe, have good bank and other connections, and are specially useful in those personal relationships which are made so much of in the business of this country. Equipped with a good article or group of articles in which they have confidence, and for the sale of which they have been carefully prepared through preliminary correspondence with the American exporter, they are able to canvass the field as Italians to Italians, with all the implied advantage.

Such personal representation will be needed in territory so warmly contested by European competitors. In view of the general failure of catalogue campaigns the consulate at Milan has gone into this matter with care and studied it for several months.

THE CONSULATE FOR PRELIMINARY TRADE CONNECTIONS.

While it is not entirely true that advertising in the English language is worthless in this territory, after studying this part of the case with care, I believe that the ordinary inquiry letter, sent to the consulate with the request that its terms be referred to a list of trustworthy individual agents, is the best form of preliminary connection to be had. This brings the firm's wants directly to the knowledge of this consulate, which has organized a simple system for communicating with representatives desirous of attaching themselves to American houses. With the assistance of the Chamber of Commerce and the Milan Commercial Museum, and by individual effort on the part of members of the consular staff, persons known to be seeking agencies for American or other foreign goods have been listed in the office, and their respective special lines indexed. They have been encouraged to visit the consulate, at more or less regular intervals, and are there supplied with bulletins of American addresses which have reached the consulate in inquiry letters from home. Special inquiries, dealing with explicit demands regarding a single article by a house, whose intention is evident from the tone of its letter, are referred directly to such representatives as are listed for that line. They are invited to come to the consulate for a conference, one at a time and generally after business hours, and are placed in possession of such information as has been sent to this office by the exporter. In this way the consulate learns whether or not the prospective agent can speak and write the English language, and receives from him such suggestions as can best be communicated to the house by the consulate itself. The rest of the matter is left

to the agent, on his agreement to take it up by correspondence without delay.

So far this plan has worked well. The number of Italian agents taking advantage of it is increasing at a good rate.

Houses seeking information from the consulate as to the financial responsibility of agents applying for territory and terms are referred to the commercial agencies in the United States, all of which have branches in Milan equipped to give the most detailed information of this character.

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The consulate has found that catalogues, even in English, are of some value in such a system as that outlined above. If the prospective agent is reasonably interested in the inquiry-letter of the American house, his interest is heightened by a well-illustrated catalogue, and his correspondence with the house in initiating relations is bound to be much more intelligent. The consulate has generally found it well to be somewhat reserved in the distribution of catalogues. The Continental houses with representatives in Milan are extremely careful about giving out their detailed catalogues with price lists. Very much better results have been obtained in this office by giving out the catalogue only to persons of sufficient importance to have proved their title to it. The catalogue is of use after the agent has been called on and presented with the inquiry of the home house; but it is of little use to send it unaccompanied by an inquiry-letter, or by something which will explain clearly the firm's intention and need for an intelligent conference with agents interested in a particular line of merchandise.

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An illustration of the imperfect understandings which are often allowed to go as the basis for trade between the American exporter and his Italian agent has been afforded in Milan within a year, when an apparently trustworthy and important representative, wishing to take up a group of noncompeting American goods, undertook to correspond with their manufacturers in the English language. He took their addresses from a trade journal, without knowing our language well enough to understand its import in a business letter or in print, and wrote for samples and terms. The goods were sent to him by several houses, with the understanding on his part that they were to be treated as samples and distributed to the trade, he to pay the house, less his commission, such sums as he collected for their sale, if sales resulted. This is a common German method of introducing certain classes of goods. The American houses did not understand

the case that way, and, the goods having passed out of the agent's hands, they began action against him to secure payment which he had not yet received from his own customers.

Another case was that of an energetic young agent with an unusual influence who was asked by the personal traveling representative of an American house to undertake the introduction of its goods. Investigation showed that the opportunity was exceptional. The traveling representative agreed with the newly appointed agent that a certain quantity of goods were to be sent to Milan for free distribution in the trade, which has up to now been possessed entirely by the Germans, who are very liberal with their samples and their collections. On arrival the goods were distributed by the agent and a remarkably favorable impression was created in the trade. Soon after the American house sent the agent a bill for the goods, with the statement that they were charged to his account, subject to credit for such of them as he might sell.

These misunderstandings arise from lack of care in making the preliminary arrangements, and in the difficulty of correspondence in a foreign language. The advice of the consulate is that Italian be used when it is possible, and that the greatest care be taken to scrutinize the translations of so-called expert foreign correspondents in the United States, offering their services at a price per letter. If English is used it should be as clear as possible, and all doubt and question removed before coming to an agreement with the agent. If there is no other way of making an explanation, this consulate is always at the disposal of American houses who desire to have their terms elucidated to the prospective buyer.

IMITATION AND SUBSTITUTION—TRADE DIRECTORIES.

One result of a more active canvass of the Milan district by American exporters will be the more extensive imitation of American goods. This is done in a large way in American shoes, sample orders being given by the local manufacturers who have retail stores in Milan, and who copy the original with a certain amount of external success. There is, however, no relation whatever between the two shoes in quality. The genuine shoe sells in Milan for from $4 to $5.25, and the imitation for about $3. Up to now these goods have kept the local territory almost entirely closed to American footwear.

Manufacturers of patented articles might, with valuable results, have their agents in Milan as elsewhere maintain a watch for the appearance of substitutes. Many of the latter are not made in Italy, but are sent in from adjoining countries to compete with the genuine American stock. There are numbers of small goods in this market which are apparently not American at all, though they bear American labels, and might pass for the originals but for inferiority of finish. This last is particularly true of padlocks, which are carded and displayed here by Continental exporters in competition with the higher priced and better made American locks that are making headway but slowly.

No dependence can be placed in trade directories of Italy when unassisted by some other medium of information and preferably some person familiar with the country. The numerous trade directories in the Milan district have the usual fault found in books of *the kind, elsewhere*, namely, repetition of firm names which have long

been out of existence. If trade directories are to be used they should be selected with exceptional care by some one accustomed to the trade of the field, and should be renewed annually. The best information is that sent out by the consulate in response to direct inquiry-letters.

An example of the uses to which trade directories are sometimes put was given by a foreign export agency which recently wrote to Milan and asked that it be supplied with a second-hand copy of such a volume, from which to compile lists for its American inquirers. A special directory of firms equipped to handle American goods is in preparation at the consulate, and will be transmitted as soon as possible. [When received it will be available for consultation at the Bureau of Manufactures.]

ADVERTISING—SAMPLES AND DEMONSTRATIONS.

Newspaper advertising in the district is costly, but the circulation is very wide. Well-written American matter, translated by a high class expert, could be placed to advantage in Milan by any firm with a volume of business or prospect sufficient to warrant the expense. There is one excellent advertisement writer in Milan available for American firms. The placing of the space should be left to the local agent after a full review of the territory and of the proposed mediums by the house. Newspaper advertising is not yet fully developed in Italy, and the opportunity is thus enhanced in value for live American houses needing that sort of publicity.

Billboard space is offered in large quantities and at reasonable rates. For both this and booklet publicity there are high-grade local supplies of cuts, inserts, and halftones. Programme advertising is less developed than in the United States and for that reason offers a good opening for special effects. Street-car space is another vehicle for advertising at a fair price.

For such articles as can reasonably be given that sort of treatment the Milan district offers an unusual opportunity for the free distribution of samples. Even for articles not usually so treated in the United States this territory is specially responsive to free distribution on account of the easy-going attitude of Continental merchants who want their goods introduced here and who follow this method as a form of advertising. The system is highly recommended when given a strict and rapid follow-up campaign with which to sustain it.

Not only in Milan, but in the dozen other cities of the consular district there is an almost untouched opportunity for demonstration, and particularly for window demonstration, of food products and articles for women's wear. Such a campaign would cost less than in the United States with certainly equal profits.

FINANCES AND GENERAL CONDITIONS.

The financial condition of the district is good, because, though it is one of the most intensely active industrial communities in Europe, its commercial operations are founded on an underpinning of agricultural interests, which are the true source of its wealth and prosperity. The crops of 1907 were very good, and the outlook in that direction for 1908 is equally good, excepting in the wine crop, which can not, in the nature of the case, be so abundant as that of 1907. The 4,000,000 people making up the population of the Milan district live largely off the soil products of their own provinces. The feeding of Milan city

alone—the communal territory contains a population of more than 900,000—affords a steady income to the surrounding agricultural population.

Silk and cotton textile manufacturers in the district in 1908 will do little buying until the latter part of the year, so far as new machinery is concerned. The reequipment of these mills, which has been quite general in Italy of late, will probably show a general halt, or at all events a strong slowing-down. If surplus stocks, choked up by the sudden reduction of outlet in the last few months, can be given delivery under anything like favorable circumstances, the situation will improve greatly before the opening of 1909. But even in that event, it is hardly likely that Italian industries will regain for several years the pace they had taken at the beginning of 1908. That pace was perhaps too rapid, and the reduction necessary. If so, the reaction is by no means an unhealthy sign, but quite the contrary.

In the silk trade there is a general depression and a run of low prices, which are believed to be still on the move toward lower levels. But the decrease is with relation to the scale prevailing in 1907, which was abnormally high. Even at the present reduced prices, which are in general 30 per cent less than those of 1907 at this season, the scale as a whole is higher than it was five years ago, and compared with that of the last twenty years it can not be regarded as indicative of great depression. In short, in the silk trade, though the unexpected drop worked loss to a great many individuals who were operating on the basis of a much higher market, there prevails a condition similar to that in other branches of industry, viz, a reduction to a more logical and natural level from a run of things exceedingly advanced.

MARKET FOR STATIONERY.

FIELD FOR AMERICAN MAKE—DEALERS ARE INTERESTED.

Consul Dunning also forwards the following report on the opportunity for American stationery in Italy:

The greater part of all the stationery used in Italy is imported from Germany. Very little native stock is seen on the market. The Italian manufacturer is not yet equipped to compete with his German neighbor, although he has made strong efforts to do so in this, as in nearly every other line. The German article is made attractive to the eye. Case after case is artistically arranged in show windows throughout Italy. Besides the finished appearance of the German article, it is very cheap in price.

American novelties are copied by foreign manufacturers and sold successfully on the Italian market. The quality of such stationery is poor. At present a superior quality is sought, even at a higher price, and it is claimed that the German manufacturers fail to furnish it. The American manufacturer has a good chance to supply this demand, which is large enough to bring him satisfactory profit and make it worth his while to export to Italy. The main advantage the American manufacturer has over the German is that he has a better quality and more abundant supply of wood, lead, and metal at his command The German stationery sold in Italy does not compete with the American stock in quality and finish.

PENS AND PAPER—TRADE METHODS.

There is a large demand for pens. The most popular style is long and pointed, pierced three times above the point. An Italian educational rule says that this form must be used in all schools, which thus creates a large demand.

Finer grades of American business paper would find an excellent opening, nothing as good in quality being on the market at present, although there is a growing demand for it. The consulate has recently reported on the opportunity for American blotting paper in Italy.

The best method for the American manufacturer is to send a traveling salesman to Italy with a full line of samples to "drum up" the trade, but if this is impossible Milan importers of stationery could be addressed in Italian or French and supplied with samples and price lists. This system would undoubtedly bring results, as the consulate has had requests from local stationery importers to be put in touch with American manufacturers. This report is made in compliance with the request of these importers, whose names and addresses are furnished herewith [and may be secured from the Bureau of Manufactures].

General stationery (pens, penholders, etc.) entering Italy pays a duty of $15.44 per 220 pounds. Stationery decorated with pure gold, silver, or silk pays $28.95 per 220 pounds. The duty on writing paper, not ruled, is $2.41 per 220 pounds; on envelopes, $4.34 per 220 pounds.

UNITED KINGDOM.

BRITISH BUSINESS METHODS.

OPENING FOR AMERICAN CARD INDEXES AND FILING CABINETS IN ENGLAND.

Consul J. Perry Worden, of Bristol, reports as follows on the opportunity which offers for the introduction into England of improved apparatus for indexing and filing, and the American system of bookkeeping:

Indexing by cards is almost unknown in Bristol and vicinity, and much of what is possible in demonstrating it remains to be done here. Probably not a dozen business houses use the card index extensively; hardly a physician or a lawyer here is aware of its convenience; not a stationer keeps in stock enough to give an intelligent idea of the method; and few, if any, printers prepare such cards, the largest wholesale pressmen reporting that they themselves stick to their ledgers and receive no orders for card-index printing.

One of the chief obstacles to be overcome is the conservatism of British merchants and professional men, but the fact that many English firms are already engaged in making loose-leaf ledgers proves that the people here need only be shown a really good thing in order to adopt it. A helpful factor in this city should be the use of the American card catalogue in the new Bristol Public Library—an institution equipped, in the main, with American apparatus. Another favoring condition, if properly kept in view, is the conviction of many

British merchants that their present systems of coinage and bookkeeping are not conducive to economy in time and labor, and to the greatest success in modern business competition.

It will probably not be difficult to induce some firms to adopt American bookkeeping, with all the changes it involves, as a substitute for part, at least, of their own—one leading publisher here now keeping all his foreign transactions in terms of dollars and cents. In most cases, however, the ruling and other typography on index cards should be made up for pounds, shillings and pence, and to satisfy other English customs. It is even possible that entirely new devices in cards and indexing envelopes may be required to fully meet English demands.

HOW CARD INDEXES SHOULD BE INTRODUCED.

To introduce card indexing into Great Britain the American manufacturer should secure the services of representatives thoroughly familiar with British business and social ways and then supply them with all the outfit necessary to fully demonstrate the index and its wide adaptability. Such representatives should not dash through the country. It will take some time to meet and convince business men long accustomed to other methods, and a much longer time to even get at the body of professional men—physicians, lawyers, clergymen, professors, and others—who need these very time and labor saving devices and whose steady patronage will be so well worth securing.

At the very outset practical demonstration with the indexes themselves will be required to win over the skeptic, and not the exhibition of catalogues, however well illustrated, while depots conveniently located will be needed to supply the outfits ordered. The fullest stock of the more portable and lower-priced sets should be displayed first, being probably the most salable, but samples of the more extensive and elaborate indexes may be exhibited also. The small trader hesitates about stocking heavily in high-priced foreign goods, and is easily discouraged when repeatedly refused by regular patrons, and exclusive and often isolated agencies work up part only of the waiting trade. In the writer's judgment, therefore, it will always be best to have a thoroughly competent advance agent or two who can introduce the card index and get it well established, and who will work in close, friendly touch with the trade-folk generally. Of course care must be taken to forestall imitations.

PRICES AND QUALITY.

The superiority of American card indexes and cabinets in design and finish is clearly seen, and it remains for the American manufacturer merely to maintain the standard and see that the middleman's profits do not push up the selling price to a point beyond the average Englishman's resources. Some American apparatus now offered for sale here appears considerably higher in price than the same article at home, and this is clearly the case with certain English imitations.

In some respects, the English merchant often gravitates toward an inferior article in stationery and printing—pasteboard, instead of wooden drawers and filing cases, cheap writing paper, etc., being frequently used, which may be from economic necessity—while the English professional man, or retired gentleman, is very conservative about

departures from social tradition. His long reluctance to use the typewriter, in fact, gives warning that skill and tact may be necessary to convince him of the serviceableness in literary and highly differentiated work of the card index.

The American maker of card indexes, therefore, wishing to reach the English merchant and manufacturing trade, must consider whether it is best to provide inferior cards and cheap cases, such as those of pasteboard, or whether more will be gained in the long run by insisting that the best is always eventually the cheapest. Probably printing is cheaper here, owing to the difference in the wage scale, and to give full satisfaction to the customer it will be necessary to secure in each locality at least one first-class printer, capable of putting on index cards all the tabulations or forms they will carry.

FINELY FINISHED CABINETS.

Finely finished boxes and cabinets, harmonizing with an English gentleman's household furniture, especially cabinets that may be closed and locked, are most likely to appeal to him, and since dies are widely used on private stationery in England—nearly every family in good circumstances having a die at a stationer's, or using one for stamping paper and cards, without ink, at home—it is conceivable that index cards, stamped with monogram or crest, and cabineted in mahogany or Chippendale or Louis finish, or natural black walnut, may be considered the most attractive in the library. As to the matter of expense, freight rates are moderate between America and English ports; there is no duty on such indexing outfits, and the apparatus ought to be sold in England almost as cheap as in the United States, and could be offered here, perhaps, at even the same rate. The new docks of Bristol, promised for next summer, by which this city hopes to regain its former trade at sea, and to which consignments may then be sent direct, should favor the introduction in west England of just such American goods.

The American office or library file of several drawers, all of wood, is seldom seen here, and cabinets with roll-top fronts are less known even than the card index. Closing and locking cabinets, therefore, at prices not prohibitive, should attract the Englishman, who favors order and privacy in business, and who has an eye to neat office equipment. Most English people are sensitive about the finish of furniture for the home, and all want articles that are proof against the trying climatic changes of the country. No cabinet or other wooden furniture, therefore, should be sent here unless well dovetailed, fortified, and thoroughly seasoned, and not likely to require the services of carpenter and joiner, as many American desks do, which swell and crack when here a month. A satisfied patron is the best advertisement in the upbuilding of any trade, particularly among foreign nations.

SHOES IN ENGLAND.

GOOD MARKET FOR AMERICAN FOOTWEAR IN BRISTOL.

According to Consul Worden there is an excellent field for more trade in American shoes in Bristol, and he outlines how this may be secured:

This English city has a population of some 360,000; there are, perhaps, 90 to 100 shoe shops here, and yet there is only one store selling

exclusively American shoes, and another store selling American shoes together with shoes made in Scotland from British leather fitted to lasts imported from America. One or two American firms, well represented in Liverpool and other British cities, have not yet entered Bristol, and a leading manufacturer in the United States making a well-known shoe has lately taken away an agency from here, while establishing his own business house in London and seeking to draw trade from Bristol by means of mail orders. This is a rather doubtful procedure, probably, since the British public is not yet used to the system.

English shoe dealers maintain that the sale of American shoes is on the decline in England, but perhaps the highest compliment that can be paid to the American shoe industry is the frequent placard, "All British manufacture," in shoe-store windows here. These same dealers admit the excellence and sometimes the superiority of American uppers and patterns.

The objection to American shoes seems to be chiefly as to the leather used by American manufacturers in the soles. The contention is that while American makers get the hides into shape by the use of acids in a few weeks, the English tanner sticks to the old-fashioned process of eight or nine months of tanning, and produces in the end a sole leather unrivaled in the world. A company doing considerable business here has English butts sent to America, to be made up into American shoes, and seeks to overcome English prejudice by plainly stamping on each shoe the fact that the soles are of English leather.

ADAPTATION TO ENGLISH NEEDS.

Two conditions call for a different sole for shoes to be sold and worn in Great Britain than is generally offered and used in the United States. One is the greater rainfall and dampness here, and the other the indisposition of the English, both men and women, to wear rubber overshoes. The American manufacturer of shoes, therefore, who wishes to do business in Bristol should either secure English leather for the soles and make them up with as many breadths for each size as is possible, or send here a heavier sole, and one treated, perhaps with chemicals, to resist the moisture. Regard, also, should be paid to the preferences of the English for this or that style or height of shoe, a good walking shoe being always in demand here. Heavy, clumsy shoes are rapidly giving way to lighter and more shapely forms, so that England is in no sense a country for the poorer class of foot wear alone. Bristol has large shoe factories, but they turn out shoes sold chiefly in Wales and among the miners, in this respect doing a business similar to that of several large factories in the Middle West of America, and do not materially affect the local shoe trade.

Some American shoes sell here for the equivalent of $5 or $7, but the popular price is 16s. 6d., or $4. If one or two makers of shoes selling at $3.50, or even $3, would come into the Bristol market and sell their products here at the equivalent of the home price in America, there is little doubt that the 2 to 4 shillings lower price would enable them to undersell the British manufacturer, who, it is assumed, is handicapped with slower and less productive service.

FRANCE.

LARGE INCREASE IN IMPORTS AND EXPORTS LAST YEAR.

Consul Louis Goldschmidt, of Nantes, transmits the following translation of an article, from a leading French journal, reviewing the foreign trade of France in 1907:

The commerce of France in 1907 amounted to 11,589,678,000 francs ($2,236,807,854), an increase of 695,720,000 francs ($134,273,960) over 1906. Although the last month of the year has not had, for the exterior commerce, as happy results as the preceding months, since it shows a considerable decrease in imports and exports, the balance sheet for 1907 is very favorable.

Imports last year increased 420,397,000 francs ($81,136,621), of which 191,320,000 francs ($36,924,760) fall under the head of raw materials. Exports increased 275,323,000 francs ($53,137,339), of which 152,936,000 francs ($29,516,648) represent manufactured articles. These figures constitute a striking testimony of the activity with which our industries have been pushed during the last year.

Under the head of food products, imports diminished in cereals, rice, flour, and wines, and increased in fruits, coffee, cattle, meats, fats, fish, cheese, butter, and eggs.

The increase in imports of raw materials has been considerable. The table which gives the details shows particularly the important increase in silk, cotton, oleaginous grains, mineral oils, coal, and ores. The only important decrease is in raw hides.

EXPORTS OF THE COUNTRY.

Under the head of exported foods and food products there was an increase of 38,000,000 francs ($7,334,000) in round numbers. The articles which have benefited are farinaceous foods, wines, brandies, and raw sugar; there has been a decrease in butter, meats, and vegetables; fruits, refined sugar, and fish do not show any appreciable change. Under the head of raw materials, there were increases in iron and steel castings, wood and wood pulp, seed grains, wool, millinery plumes, and cotton, but a notable decrease in silk, rubber, raw hides, and copper. In regard to manufactured articles, in spite of a deficit of more than 27,500,000 francs ($5,307,500) in December, the total increase was 152,936,000 francs ($29,516,648). There is reason to be fully satisfied with such a result. With the exception of hides and leather goods, and ladies' wearing apparel, there has been an increase in all branches, and the increases affecting silk textiles, "articles de Paris," millinery, and artificial flowers merit special attention.

TRADE WITH THE PRINCIPAL COUNTRIES.

As usual the United Kingdom is shown to be France's best customer, as exports thereto amounted to 1,374,937,000 francs ($265,362,841), an increase of 80,000,000 francs ($15,440,000) over 1906. This is almost a record in French business relations with Great Britain.

The following shows the exports to the principal countries in their respective order: United Kingdom, 1,374,937,000 francs ($265,362,841); Belgium, 865,362,000 francs ($167,014,866); Germany,

656,747,000 francs ($126,752,171); United States, 402,037,000 francs ($77,593,141); Switzerland, 336,482,000 francs ($64,941,026). Russia bought 58,000,000 francs ($11,194,000), or hardly more than Turkey.

Among the French products of industries and agriculture sold to the United Kingdom, mention should particularly be made of raw skins, hides, and furs, plumes for millinery, potatoes and seed grains, raw and refined sugar, common woods, wines and brandies, pottery, glass, and crystal ware, toys and fancy goods, millinery and artificial flowers, and lastly, textiles in cotton, wool, and silk. British exports to France in 1907 made an advance of 114,500,000 francs ($22,098,500).

With Germany, French commerce, in the aggregate, increased 59,000,000 francs ($11,387,000). Much greater is the increase of business with Belgium—101,000,000 francs ($19,493,000). In 1903 French exports to Belgium had decreased 3,500,000 francs ($675,500); they show in 1907 an increase of 60,500,000 francs ($11,676,500), or nearly 7 per cent.

In spite of the consequences of the financial crisis French exchanges with the United States have risen to 1,035,000,000 francs ($199,755,000), which represents an increase of 45,000,000 francs ($8,685,000) over the preceding year. True, it only bears on imports, as the exports have remained stationary or have even slightly decreased; but there is no reason to be alarmed over it, for no doubt as soon as the crisis is over the United States will again become the serious customer, which it has always been, for French articles of luxury.

It is with Austria-Hungary that the French trade movement has been relatively the most accentuated during the past year. The increase is particularly in favor of France to the extent of 8,329,000 francs ($1,607,497) in exports, or 22.7 per cent, and 1,501,000 francs ($289,693) in imports.

The journal adds that these aggregate results are encouraging for French merchants, manufacturers, and agriculturists, and that they are so also for those who, by their management and counsels, contributed to this progressive commercial expansion.

AUSTRIA.

TRADE WITH THE UNITED STATES.

STEADILY GROWING SALES OF MANUFACTURES TO THIS COUNTRY.

Consul-General W. A. Rublee, reporting from Vienna, states that the declared value of exports from the various consular districts of Austria, exclusive of Hungary, to the United States during the calendar years 1905, 1906, and 1907 is shown in the following table:

District.	1905.	1906.	1907.
Carlsbad	$1,432,110	$1,513,947	$1,577,996
Prague	1,789,001	2,323,186	3,214,850
Reichenberg	2,682,404	3,187,876	3,330,061
Trieste	1,498,449	1,806,368	1,030,765
Vienna	5,421,106	6,189,124	7,194,626
Total	12,823,970	15,020,501	16,348,318

The increase of $1,327,817 in the value of the declared exports during 1907, as compared with 1906, is not as marked as the increase during 1906, as compared with 1905, but it indicates that Austrian trade with the United States is flourishing as never before.

KAOLIN EXPORTS GO PRINCIPALLY TO GERMANY.

The exportation of kaolin from Austria is principally to Germany, which takes 95 per cent of the total export of this article. Of the remaining 5 per cent only a very small amount is exported to the United States, unless a portion of that exported to Germany is re-exported to the United States. According to the official statistics the direct export of kaolin from Austria to the United States in recent years was as follows: 1903, 80 tons; 1904, 122 tons; 1905, 343 tons. Since 1905 there is no mention of an export of kaolin to the United States in the official statistics. New York is the port of entry in the United States to which shipments of kaolin have been made.

The exports of kaolin from Austria during the years 1903 to 1906, inclusive, according to value and quantity, were as follows:

Year.	Tons.	Value.	Year.	Tons.	Value.
1903	191,198	$960,000	1905	150,837	$1,200,000
1904	140,782	1,120,000	1906	169,140	1,120,000

The average price of kaolin in recent years has been 3 crowns 50 heller (about 70 cents) per metric centner (220 pounds). Kaolin is found principally in Bohemia, though there is one kaolin works in Lower Austria at Aspang, from which, however, there has been no export to the United States.

COMMERCIAL TRAVELERS NECESSARY.

ACTIVE PERSISTENCE OF TRADE REPRESENTATIVES FOR SECURING ORDERS.

Consul John Twells, of Carlsbad, advises that American manufacturers have recently realized the expediency of exporting their goods to Austria-Hungary, and are making an effort to establish business relations with that country. The consul discusses direct and indirect sales methods as follows:

This consular office is in constant receipt of catalogues and other printed matter from the United States. In order, however, to procure new fields for the exportation of American goods into Austria it is advisable that the Austrian merchants be personally visited by the representatives of the American firms. Perhaps in no other country are merchants so much accustomed to be visited by salesmen and the representatives of manufacturers at their places of business as in Austria. In January nearly 800 commercial travelers and representatives of manufacturers from all parts of Austria, Germany, France, and other European countries canvassed this place of about 16,000 inhabitants, all at the same time, to work up business in the town and environs. It is asserted that during the first two months of the year at least 2,000 travelers endeavor to sell goods here.

The perseverance, energy, and skill with which these salesmen recommend and praise their goods is so strenuous that there are

scarcely any tradesmen who do not purchase perhaps 25 per cent more stock then they really need. This condition prevails not only in the towns of this consular district but over all the Austro-Hungarian Empire.

Under these conditions the mere sending of a few price lists or pamphlets in a foreign language—say in English, French, or Spanish—or the usual mode of advertising on a small scale is of little importance. There is no doubt that many American productions could be sold in Austria-Hungary, and that the quantity could be largely increased, especially as a friendly feeling exists in Austria toward the United States. However, business in Austria can in most cases only be done if the customers are visited personally by American merchants, their representatives, or responsible agents. The latter are obliged to pay large taxes in Austria, and they accept, as a rule, agencies only from first-class houses which are prepared to contribute moderately at least to their expenses.

SWITZERLAND.

EXPORTS TO THE UNITED STATES.

STATISTICS SHOWING THE TRADE FROM THE VARIOUS DISTRICTS.

Consul-General S. C. McFarland, writing from St. Gall, furnishes the following statistics of the exports of Switzerland to the United States for the periods enumerated, calendar years being meant:

	1905.	1906.	1907.		1905.	1906.	1907.
St. Gall	$12,025,230	$14,879,058	$17,760,602	Berne	a$1,848,452	$1,710,107	$1,848,554
Basel	3,526,471	3,114,782	3,199,673	Chaux de Fonds agency	a1,524,362	1,623,714	1,366,526
Zurich	3,826,213	3,528,603	4,402,747				
Lucerne	452,240	450,634	503,622				
Geneva	1,014,653	1,231,294	1,316,876				
Vevey agc'y	548,951	710,364	646,969	Total	24,766,572	27,248,556	31,045,569

a Figures for fiscal year.

The following statement shows the values by classification of the declared exports from Switzerland to the United States for the past two years:

Articles.	1906.	1907.	Articles.	1906.	1907.
Aniline colors	$798,010	$763,655	Music boxes	$43,151	$32,854
Cheese	1,833,569	2,107,186	Scientific instruments	31,508	32,850
Chemicals	180,931	182,989	Silk productions	4,117,126	4,693,667
Chocolate	666,012	590,649	Spirits	23,664	24,429
Condensed milk	27,179	39,795	Straw goods	85,564	101,596
Cotton goods and yarn	1,462,491	1,519,518	Watches, clocks, etc	2,409,517	2,522,043
Embroideries	13,261,960	16,212,547	Miscellaneous	1,327,329	1,072,010
Hides and leather	359,156	511,928			
Knit goods	502,037	547,178	Total	27,248,570	31,045,570
Machinery	119,352	90,676			

FURTHER DECLINE IN EXPORTS FROM ST. GALL.

The effects of the recent American financial disturbance upon the St. Gall industries is shown by the exports from this district for the first two months of the present year.

Exports to the United States for January and February show a decrease of $536,982, as compared with exports for the same period

in 1907. Carried through the year this would result in a decrease of $3,221,892, reducing the export figures of $17,760,602 of 1907 to $14,538,709. As much of the business of 1908 so far has involved the execution of orders received prior to October, 1907, it is reasonable to expect that the next few months will show a still greater proportionate decrease, to be offset, it is hoped in trade circles, by an increase of new business in the summer and fall.

Prices, while suffering somewhat, have been supported by united action in reducing output and curtailing working hours, many of the larger concerns running but six hours per day, while individual and house workers are practically at a standstill. Besides the curtailing of working hours, wages have suffered severely, allied industries being also affected. An examination of the figures will demonstrate that the full effects of the slump have probably not yet been recorded.

COMPARISON WITH LAST YEAR.

The following are the exports for January and February for the respective years:

Articles.	1907.	1908.
Appenzell goods	$2,642	$600
Bolting cloth, silk	11,464	7,349
Cheese	71,641	40,960
Church articles	1,474	2,847
Cotton embroidery, hand machine	666,826	371,408
Cotton embroidery, schiffli machine	1,560,994	1,570,352
Cotton laces and trimmings, hand machine	29,955	13,624
Cotton laces and trimmings, schiffli machine	138,540	91,466
Collars, blouses, robes, ties, etc	67,875	43,169
Curtains	170,685	131,739
Figured and dotted swisses, woven	97,054	56,479
Figured and dotted swisses, embroidered	24,519	13,252
Gegauf, tucks, and other sewed articles	3,801	2,381
Handkerchiefs	44,295	58,735
Job of hand machine embroidery	15,549	14,852
Job of schiffli machine embroidery	22,052	34,265
Job of handkerchiefs	3,530	5,379
Kilo embroidery imperfection, hand machine	2,358	3,276
Kilo embroidery imperfection, schiffli machine	31,637	42,558
Machines and parts thereof	6,624	1,805
Plain cotton cloth, muslin, nainsook	76,054	46,748
Plain cotton cloth, typewriting, etc	2,549	
Ribbons		344
Silk laces and trimmings, hand machine	49,163	22,385
Silk laces and trimmings, schiffli machine	12,656	6,224
Tidies, pillow shams, scarfs, etc	23,969	15,395
Yarn	3,858	2,784
Miscellaneous	12,131	9,849
Export to the Philippines, chiefly cotton cloth and cotton threads	3,200	2,961
Packing, consular charges, etc., not included in above		6,925
Total	3,157,094	2,620,110

TRADE MAINTENANCE.

LUCERNE DISTRICT SHOWS NO DECLINE IN EXPORTS TO AMERICA.

A report from Consul R. E. Mansfield, at Lucerne, states that the financial crisis and the stringency of the money market in the United States seem to have had little or no adverse effect upon the export trade with America from that consular district of Switzerland, as the following will show:

December showed a larger value of exports than any other month in the year 1907 and greater than for any month in 1906. In fact, the last three months of the past year show an increase in the volume

and the values of exports to the States over the corresponding months of the preceding year. This increase may be partially due, however, to the fact that Swiss exporters were filling American orders already on their books as rapidly as possible during the last months of the year, fearing that delay might mean cancellation. Another fact may be taken into consideration, and that is the shipments made in the early winter were on orders received previous to the financial disturbance.

COMPARISONS FOR JANUARY.

A comparison of the figures representing the export trade of the Lucerne district with the United States for the month of January, 1908, with the corresponding period of the previous year furnishes further evidence of the fact that the financial disturbance which characterized the closing months of the last year's business in America has not influenced adversely the export trade from this locality. The number of invoices consulated in January was greater than during the corresponding period of the preceding year. The value of exports from the district to the States for January, 1908, amounted to $25,040 more than is shown for the same month in 1907.

The foreign commerce of this district, both in imports and exports, is of a class that is not sensitive to the influence of financial disturbances, as it consists more of articles that may be classed as stable rather than luxuries. Straw and imitation straw goods, large quantities of which are exported from this district to America, seem to have felt the effects of the depression very little. In silk ribbons, cotton tapes, scientific instruments, cheese, clocks, brushes, etc., there seems to have been practically no diminution of trade in recent months, and the majority of the manufacturers of these articles report that they are not apprehensive of any considerable decrease in trade during the year 1908.

Manufacturers of knit goods, lisle, silk, and cotton underwear report that the American financial situation has already had the effect of materially decreasing their export trade with the States, and some of them take a not hopeful view of the situation for the future. The manufacturers of chocolate also complain of decreasing trade, and regard the conditions as unfavorable for this year's trade.

AMERICAN GOODS IN SWITZERLAND.

The articles imported to this district from the United States cover a wide range and come largely within the class of stable or articles of utility, such as shoes, wearing apparel, hardware, machinery, oils, druggists' sundries, toilet articles, canned goods, and other food supplies of various kinds. The demand for American imports is increasing, and the prospects for satisfactory trade from the United States in the markets of the district for the year 1908 seems very favorable.

A favorable indication of the exchange of commerce between this district and America is the fact that there has been no general increase in the exports, whereas the increase of imports from the States to the local markets has been very perceptible. Although definite statistics on the import trade of the district are not available, the increase in trade is evidenced by the fact that many articles of Amer-

ican manufacture have been added to the displays in local shops in the last few years. Flour, iron, steel, lumber, shoes, and various classes of machinery may be reckoned among the more recent articles of import from the United States introduced in the local markets.

SWISS BRANCH FACTORIES IN UNITED STATES.

On account of changed conditions in the industrial life in Switzerland a number of manufacturers in this consular district are planning to establish branch concerns in the United States, where they are endeavoring to enlist American capital in the enterprises. The increased cost of labor in recent years, together with high tariff duties, renders it difficult for Swiss manufacturers to compete with the local producers of like articles in the American markets. The labor question is becoming a serious problem in the industrial life of the country.

Heretofore some Swiss manufacturers have been able to work along rather primitive lines and still produce articles at a cost that enabled them to export to America, pay import duties, compete successfully, and make good profits because of the comparatively low wages paid their workmen and mechanics. But a series of prosperous years, a shortage of labor, and the increased cost of living have practically doubled the wage scale in the past year or two, which necessitates a change in the methods employed in the industrial concerns in order to meet the requirements of changed conditions. As a result many of the manufacturers are putting in new and improved machinery and equipping their plants with facilities to reduce to the minimum the number of employees. These changes tend to place them more nearly upon an equal footing with competitors in other countries and lessen their opportunities for profitable business in the United States.

On the other hand, the demand for articles that Switzerland requires from America is increasing, and the outlook for the balance of trade in favor of the States is flattering.

GERMANY.

AGRICULTURAL MACHINERY TRADE.

THE IMPORTATIONS GREATLY EXCEED THE EXPORTATIONS.

Consul Talbot J. Albert, writing from Brunswick, says that during the last ten years the German machinery industry has developed greatly in all its branches, and especially in the agricultural line. He reviews the trade as follows:

The increase in the exports of machinery of various kinds is noteworthy. In value the export is now about four times as great as the import of foreign machinery. However, the imports are not small, and in the first nine months of 1907 reached a value of between $18,000,000 and $19,000,000. Of this sum the imports of agricultural machinery attained the round sum of $5,500,000, and, as compared with the exports of the like kinds of machines, which amounted in value to $2,500,000, show a difference in favor of imports of about $3,000,000. The following table shows the German

imports and exports in marks (mark=23.8 cents) of agricultural machines from January 1 to October 1, 1907:

Machines.	Imports.	Exports.
	Marks.	*Marks.*
Mowing machines	18,111,000	365,000
Milk-skimming machines	1,895,000	2,754,000
Threshing machines	1,273,000	2,840,000
Steam plows	632,000	386,000
Lawn mowers and other machines	970,000	4,122,000

It will be seen that about four-fifths of the imports of agricultural machinery during the period mentioned consisted of mowing machines, and that the imports are almost fifty times greater than the exports of these machines. Of these, American machines had the preference. The total weight of the mowing machines imported during the first nine months of 1907 was 278,633 German double centner (double centner=220 pounds), of which the United States furnished 230,361, Canada 33,729, and England 12,585.

There were in all 52,021 mowing machines imported. During the same period there were imported 730 thrashing machines, weighing 19,774 double centner, England supplying 17,352, Canada 708, and the United States 698. The customs duty on mowing machines amounts to 4 marks (95 cents) and on thrashing machines 4½ to 7 marks ($1.07 to $1.67) per double centner, according to weight.

The greater part of the imports of milk-skimming machines comes from Sweden, and this arises from the commercial treaty between that country and Germany by which the duty on these machines was considerably lowered. There were in all 20,582 of these machines imported, weighing 5,638 double centner; the weight of the machines imported from Sweden being 4,800 and those from Denmark 344 double centner.

There were 41 steam plows imported, weighing 7,434 double centner, exclusively from England. The imports of lawn mowers and other agricultural machines amounted to 9,853 machines, weighing 14,674 double centner, 7,788 of which came from the United States, 4,299 from Austria-Hungary, 1,044 from Denmark, and 650 from England.

The exports from Germany of lawn mowers and other agricultural machines in this group and of milk-skimming machines, as will be seen from the first tabular statement, were greater than the imports.

OPPORTUNITIES IN WIESBADEN.

ROOM FOR INCREASED SALES OF AMERICAN GOODS IN PRUSSIA.

In transmitting a directory of the commercial firms registered in Wiesbaden, which is on file in the Bureau of Manufactures, Consular Agent John B. Brewer writes as follows on the trade of that city with the United States:

While the export trade from this district to the United States, especially in wines and chemicals, is satisfactory, there seems to be not much of a chance, as yet, for direct imports from the United States. Wiesbaden relies almost exclusively on the larger German commercial centers for its imports, the dealers being mostly retailers. There is, however, no lack of interest in American goods. In fact,

some of them are very much appreciated, and it may prove a fruitful experiment to have some of the more prominent Wiesbaden dealers brought into closer contact with American manufacturers by means of pamphlets, catalogues, etc.

In all probability the dealers would then interest their importing friends, and thus a greater demand—that is, larger and more varied orders—would follow. A special list is inclosed of the prominent Wiesbaden dealers in such goods as may be successfully introduced from the United States, some of which are already known here, viz: Automobiles, bicycles, firearms, glass and crystal, groceries, household and kitchen articles, office furniture, perfumery and soaps, pianos, rubber goods, sewing machines, shoes, sporting goods, and typewriting machines. [Addresses of dealers in these goods are on file in the Bureau of Manufactures.]

GREECE.

CONDITIONS FAVORABLE TO AMERICAN TRADE IN CALAMATA.

The following information relative to the commercial importance of Calamata, and the growing desire of its merchants for trade with the United States, is furnished by Consul Edward I. Nathan, of Patras:

Calamata, a city of 20,000 inhabitants, in southwestern Greece, has recently become of considerable commercial importance; its numerous industrial establishments and its large exports of native products have produced much wealth and prosperity. It has two silk-thread factories, two steam refineries for olive oil, four olive-oil soap factories, a wine and spirit manufactory, and various smaller industries. It exports about 30,000 tons of currants annually, about one-third of which go to the United States. Large quantities of figs, olives, olive oil, cheese, and other native products are also shipped. The value of all exports to the United States in 1907 was $166,414.

Calamata possesses a fine harbor, protected by a long breakwater and two moles. Its depth varies from 2 to 6 meters (6.65 to 19.7 feet), but a uniform depth of 6 meters will prevail when the plans for its dredging are materialized. Calamata is an important port of call for many Levant and trans-Atlantic vessels; among the various lines calling there are the Austrian Lloyd, Austro-Americano, Panhellenique, Greek Trans-Atlantic, and Messageries Maritimes.

MUNICIPAL IMPROVEMENTS—FOREIGN GOODS WANTED.

Calamata also possesses a municipal electric light and power plant which furnishes light for public and private consumption. There is also a telephone exchange with many subscribers. An electric street railway is about to be constructed, a company having already been formed for this purpose.

A great proportion of the Greek emigration to the United States started from Calamata, and many are now returning, bringing with them products of American manufacture, and American tastes and ideas of living. This should mean a demand for American goods. The merchants of Calamata appear desirous to trade with America, many of them having been in the United States and knowing its superior advantages, yet with all the shipping facilities possessed by Calamata, and other Greek ports, and the regular, frequent, and

cheap freight facilities, the Greek market has been almost entirely neglected by American manufacturers and exporters.

There is a demand for cheap hardware and small machinery, including printing and bookbinding equipment. Among the articles that are sold in considerable quantities are cutlery, scissors, locks, belts, screws, and nails, meat choppers, sewing machines, and pumps. [The principal dealers at Calamata in the foregoing merchandise, as well as the name of the official who may be addressed in regard to the new street railway, may be obtained from the Bureau of Manufactures.]

SPAIN.

REDUCED TRANSPORT DUES.

MODIFICATION OF CHARGES ON GOODS FROM AND TO THE UNITED STATES.

The following information concerning the landing and shipping dues paid by passengers entering Spain and the tax on goods arriving from and clearing for the United States, under the old and the modified regulations, is furnished by Consul-General B. H. Ridgely, of Barcelona:

Beginning with the year 1908, the impuesto de transporte (transport dues) levied on all goods landed at Spanish ports, and which amounted to 5 pesetas per ton on European imports and 7 pesetas on merchandise arriving from the United States, will in future be the same on all imports whether arriving from American or European ports, the rate being with a few exceptions 5 pesetas per ton. At Barcelona an additional tax amounting to 1.5 pesetas per ton is imposed for the harbor works.

Passengers who formerly paid landing and shipping dues amounting to 25 pesetas on each first-class ticket, 15 pesetas on each second-class ticket, and 5 pesetas on a third-class or steerage ticket, now pay only 4, 2, and 1 pesetas, respectively.

OLD AND NEW RATES.

The modifications introduced into this transport tax will slightly alter the charges on certain goods received from and shipped to the United States, as the following table, giving the amounts in silver pesetas, will show:

[The Spanish gold peseta is equal to 19.3 American cents, but the silver peseta has a fluctuating value in its relation to gold of from 15 to 18 cents.]

Articles.	Goods landed from the United States.		Goods shipped to the United States.	
	Former tax.	Present tax.	Former tax.	Present tax.
Minerals, dross, and iron pyrites	1.00	1.00	0.20	0.20
Other ores	2.00	1.00	2.00	1.00
Coal and coke	2.00	.50	.50	Free.
Lime, paving stones, and building materials	.50	.50	.50	.50
Pig iron	2.00	2.00	.50	Free.
Lead, in pigs, and copper regulus	3.00	2.00	1.00	1.00
Salt	3.00	3.00	.10	.10
Fertilizers	2.00	2.00	.25	Free.
Cereals	5.00	4.00	2.50	Free.
Wine	5.00	4.00	2.50	2.00
All other goods and coins	7.00	5.00	5.00	2.50

The following is a full list of goods which will pay no transport tax on their being exported from Spain: Coal and coke; bricks and tiles, earthenware, porcelain and china, and cement; iron in pigs, forged bars, old rails, iron and steel manufactures, swords and fire-arms; common soap; cotton, linen, silk, hemp, and woolen textures; hair and bristles; lumber; paper and paper manufactures; furriery, leather, and shoes; all kinds of fertilizers; machines and instruments; pressed and salted sardines, and other fish; cereals and flour; fruits and vegetables; sugar; ground pepper; spirits, liquors, beer, alcohol, cider, light red wine, and vinegar; alimentary canned goods, sausages, chocolate, candies, eggs, vermicelli, bread, biscuits, cheese, and honey; fans, sandals, matches, fishing leaders, playing cards, pouches, umbrellas and sunshades, hats, and haberdashery of all kinds.

GROWING AMERICAN TRADE.

INCREASED EXPORTS LAST YEAR TO THE UNITED STATES.

In studying the whole list of exports from Spain to the United States during 1907 as compared with those of 1906, the following important increases are noted by Consul-General Ridgely:

Sherry, $101,000; other wines, $71,000; corks, $540,000; cork shavings, $18,000; corkwood, $95,000; almonds, $255,000; sardines, $42,000; cotton cloth, $24,000; arsenic, $61,000; glycerine, $34,000; fireworks, $11,000; tanned hides, $45,000; canned vegetables, $58,000; wool, $22,000; grapes (Almeria-Malaga), $450,000; iron oar, $487,000; olives, $153,000; onions, $88,000; peanuts, $154,000; raisins, $155,000; and lead, $266,000. The total of all exports to the United States from Spain in 1907 was $13,998,695, against $11,000,628 in 1906.

CHINA.

TATSIENLU THE GATEWAY TO TIBET—COMMERCE AND TRANSPORTATION.

Consul Mason Mitchell, reporting from Chungking, gives the following information of the little-known region of western China and the Tibetan borderland:

Tatsienlu, in the province of Szechwan, western China, is the last town before reaching the Tibetan border. It is situated at an elevation of 8,400 feet, in the high mountains that extend through western China into Tibet. To reach Tatsienlu from Chungking it requires twenty-one days and from there to the Tibetan line eighteen additional days, the route crossing mountain passes over 15,000 feet high.

Until the present dynasty the Tibetan boundary line extended as far east as Tatsienlu, but under the present régime it is now drawn eighteen days' travel farther west, at the town of Batang. As this border strip of territory is mostly populated by Tibetans, they are under the jurisdiction of 3 Tibetan kings, each having his district, but all under the sovereignty of the Chinese Government.

Tatsienlu is a small town, with low wooden houses and a population of 9,000, mostly Tibetans. Its strategical and commercial importance is due to being the gateway to Tibet and the high plateaus to

the northwest. In this district are the splendid grazing pastures, where a fine quality of wool is produced. Farther on is the Tachin River, which forms the boundary between eastern Tibet and one of the aboriginal Chinese tribes called the Mantzu.

A large trade is done here in rhubarb and musk, the latter taken from the small hornless deer plentiful in this part of China. Of the exports of this district musk is the most valuable, the price of the medium quality being thirteen times its weight in silver.

The product is obtained from a sac-like gland in the abdomen. It is carefully dried and sewn in small bags, called musk pods, of 1 ounce each, made from the skin of the animal. The musk deer of northwestern China is an allied species and is only found at an elevation over 8,000 feet. It stands about 20 inches at the shoulder, but its chief characteristic is the absence of antlers in both sexes. The males have tusks protruding from the lower jaw to a length of 3 inches. The species is known as the Moschus sifanicus.

Next in importance of exports is wool. This trade of late has diminished, owing to the disturbances on the border. The coarse sack-like wool cloth "mu-tsz" is worn by all Chinese coolies, while a fine grade dyed red called "pulu" is the clothing of the higher class of the Tibetans. The lower classes, such as yak and pony drivers, wear entirely undressed sheepskins. About 45,000 pounds of wool is received annually in Tatsienlu.

GOLD MINING—TEA AND AMERICAN DRILLS—NEW RAILROAD.

Gold is known as "Huang huo" and is brought for sale in the form of dust, though sometimes nuggets are found. From 5,000 to 7,000 ounces come to Tatsienlu annually. But little profit is made there, as it brings only $20 to $24 per ounce. The Tibetan confines mining to washing the alluvial sand in the river beds. He is averse to outsiders mining in his country, his antipathy to them being very great. The Tibetan wishes to be let alone and strongly resents foreign intrusion.

The exports from western China into Tibet consist almost entirely of tea. The shipments via Tatsienlu come principally from the town of Yachow, in Szechwan Province. The tea packages are made up in rolls about 3 feet long. Each carrier will take on his back from five to thirteen, according to his age and strength. The annual value of the trade is somewhat over $750,000. The taxation amounts to 20 per cent, the bulk of which goes to the salt and tea taotai at Chingtu, the capital city of Szechwan Province. There is also a small amount of American drills dyed in Yachow going forward for the Tibetan market.

A French railroad is in course of construction from Pakhoi, on the Gulf of Tongking, to Yünnan, the capital city of the province of that name, in the southwest of China. When completed it is proposed to extend it to Batang, a distance of about 400 miles. If this is done it will give eastern Tibet and western China an all-rail route to the sea and divert the traffic from the long and laborious route via the Yangtze River. From Batang to Suifu, the head of navigation of the Yangtze, is a march of thirty-two days over the mountains, some of which are 15,000 feet in height. From Suifu to the mouth of the Yangtze at Shanghai is a distance of 1,600 miles, including the *gorges and rapids* of the upper part of the river.

BRITISH INDIA.

IMPORTS AND EXPORTS OF MERCHANDISE AND TREASURE LAST YEAR.

Consul-General William H. Michael, of Calcutta, furnishes the following summary of the sea-borne trade of British India for the calendar year 1907. The imports of merchandise are those entered for consumption, the re-exports being deducted from the imports of each province, while the exports cover only Indian merchandise:

Provinces.	Imports.	Exports.	Provinces.	Imports.	Exports.
Merchandise:			Treasure—Cont'd.		
Bengal	$166,212,075	$253,876,765	Eastern Bengal and Assam	$46,315	
Eastern Bengal and Assam	1,567,890	12,946,550	Bombay	72,021,565	$13,925,385
Bombay	133,409,480	114,768,900	Sind	2,501,905	380,080
Sind	30,643,030	65,386,760	Madras	2,841,390	1,344,880
Madras	31,511,530	62,553,210	Burma	617,200	82,080
Burma	32,834,640	55,123,270	Total	102,914,445	16,890,770
Total	395,178,645	564,655,455	Government treasure	44,282,105	6,175
Government stores	23,105,115	456,110			
Treasure:			Grand total, merchandise, stores, and treasure	565,480,310	582,008,510
Bengal	24,886,070	1,158,945			

The reexports of merchandise, not included in the foregoing statement, were as follows: From Bombay, $9,578,655; Sind, $1,654,350; Bengal, $834,830; Madras, $378,480; Burma, $223,500; Eastern Bengal and Assam, $350; total, $12,670,165.

LARGE CALCUTTA SHIPMENTS TO AMERICAN CUSTOMERS.

During the year ending December 31, 1907, the number of cowhides shipped from Calcutta was 7,483,324, which were mostly exported to Germany and Austria. The number of goatskins exported from Calcutta was 11,305,675, of which the United States took over 9,000,000, valued at $6,906,751. The number of buffalo hides shipped was 897,352, about one-half of which went to America, the remainder going to the Continent. More than 500,000 calf and sheep skins were exported, about 90 per cent of the former going to the Continent, and about 50 per cent of the latter to the United States. There were 206,360 chests of various kinds of shellac exported, of which the United States took about two-thirds, the balance going to the Continent and England.

The following table shows the value of exports to the United States through the port of Calcutta during twelve months ending December 31, 1907:

Articles.	Value.	Articles.	Value.
Chikon embroideries	$51,523	Rubber	$68,376
Drugs	5,543,471	Saltpeter	570,580
Gunny bags	2,848,775	Skins	6,906,751
Gunny cloth	20,410,666	Tea	260,643
Hides	1,157,354	Wool	95,417
Jute and jute butts	7,061,511	Miscellaneous	24,707
Mica	262,309		

The foregoing shipments to America, $45,262,083, do not include the value of tea exports intended for the United States, but which passed through Liverpool and London houses.

STRAITS SETTLEMENTS.

ANNUAL VOLUME OF MALAYSIAN PRODUCTS FOR WORLD CONSUMPTION.

The following table prepared by Vice-Consul-General George E. Chamberlin shows the quantity in tons (2,240 pounds) of exports of the principal products from the Straits Settlements, including the ports of Singapore and Penang, for the years 1906 and 1907:

Article.	United States.		Europe.		Total all countries.	
	1907.	1906.	1907.	1906.	1907.	1906.
Cloves	14	120	33	63	47	183
Coffee	226	504	237	838	463	1,342
Copra			56,830	40,476	56,830	40,476
Cubebs	17	40			17	40
Gambier	11,090	13,967	14,456	15,804	25,546	29,861
Gambier cube	1,069	1,390	2,412	2,059	3,481	3,449
Gum:						
Benjamin	12	23	304	462	316	485
Copal	4,434	4,138	5,589	4,867	10,023	9,005
Dammar	332	190	405	246	737	436
Gutta-percha	413	339	2,651	2,358	3,064	2,698
Gutta jelotong	12,644	9,681	2,297	1,318	14,941	10,999
Hides:						
Raw	399	284	2,855	3,235	3,254	3,519
Tanned			253	227	253	227
Isinglass			36	39	36	39
Malacca canes			21	26	21	26
Mace	56	31	21	23	77	54
Nutmegs	649	400	145	175	794	575
Pepper:						
Black	5,947	5,139	10,089	8,148	16,016	13,287
White	1,634	1,861	4,662	5,320	6,296	7,181
Pineapples (cases)	290,389	103,734	460,003	402,055	759,392	505,789
Rubber:						
Borneo	797	842	716	1,278	1,513	2,120
India	1		289	365	290	365
Para	3	6	715	328	718	334
Rattans	5,009	5,096	13,258	12,844	18,267	17,940
Sago:						
Flour	5,243	4,473	42,429	34,265	47,672	38,738
Pearl	710	158	2,797	3,763	3,507	3,921
Sticlac	1		99	132	100	132
Tapioca:						
Flake	1,427	845	8,419	10,835	9,846	11,680
Flour	50	1,725	1,724	5,950	1,774	7,675
Pearl	8,317	6,596	10,965	7,780	19,282	14,376
Tin	9,738	15,133	42,819	42,047	52,557	57,180

PHILIPPINE ISLANDS.

GROWTH OF IMPORTS AND EXPORTS—AMERICAN SHIPPING.

Consul Jacob E. Conner, of Saigon, Cochin China, sends the following summarized report upon the commerce of the Philippines for the year 1907, as shown by the annual report of the Bureau of Customs:

The total value of Philippine imports last year was $29,666,140, an increase of 15 per cent over that of the preceding year. The total value of exports was $34,127,253, an increase of 4 per cent. The imports from the leading countries were as follows:

Country.	Amount.	Country.	Amount.
United States	$5,664,254	Japan	$1,010,043
England	6,028,040	British Australasia	1,758,574
Germany	1,655,422	British East Indies	1,686,299
Spain	1,756,667	French East Indies	3,474,236
Chinese Empire	2,759,715		

French East Indies, of which Saigon is the chief port, for some years at the head of the list, dropped from first place in 1905 to third in 1907, on account of the decline in importations of rice. This decline is in turn due to the fact that the Philippines are supplying their own needs more completely in that commodity. Also that wheat flour is taking the place of rice, as indicated by the growth of imports of the former.

TRADE WITH THE UNITED STATES.

It is to be noted that imports from the United States have gained in about the same proportion as have those of England, in spite of the fact that the carrying trade of the United States shows a marked decline, while that of England has noticeably increased. A few of the leading imports and the values thereof are:

Cotton, closely woven cloth	$4,607,059	Cattle	$1,058,824
Cotton, loosely woven cloth	1,005,691	Wheat flour	889,174
Cotton, yarn and thread	1,321,778	Iron and steel and manufactures of	2,544,992
Cotton, knit fabrics	900,000		
Rice	3,662,493		

Importations of illuminating oil have practically doubled during the year, amounting in all to $790,447. Of this the United States supplied $551,699, an increase of $279,468. But the percentage of the United States in the total traffic fell from 75 to 69, while that of the Dutch East Indies increased from 12 to 25, and the British East Indies from nothing to 4. Russia dropped out of the competition.

Of the $900,000 worth of wheat flour imported, less than $400,000 worth came from the United States. Australia's percentage has risen gradually to 58. The report states that "it can hardly be doubted that the application of the coastwise trade laws in 1909 will probably give this entire trade to Australia."

The race for supremacy in the import trade of the Philippine Islands lies between the United States and England.

HEMP THE LEADING EXPORT—THE CARRYING TRADE.

The value of exports, inclusive of currency, during the past year is the greatest in the history of American occupation. More than a third of the values went to the United States, while England ranked second and France third as a customer.

Hemp is still the chief article of export, the value amounting to $21,085,081, or 41 per cent of the total exports, a gain during the year of $1,638,312. This was largely due to an advance in price, though the tonnage also increased. More than half of the crop went to the United States.

Marked changes are observed in the carrying trade during the past year. British vessels carried 56 per cent of the volume of imports and 76 per cent of the exports for 1907, an increase for the former from $14,940,984 to $16,697,111, and for the latter from $25,294,385 to $26,015,019. Spanish, German, Japanese, and Philippine vessels show a decline in import cargo trade from $1,783,266 in 1906 to $942,940 in 1907, and an equally marked decline in the export trade. Of imports from the United States only 16.6 per cent was carried in American bottoms.

Unless more American bottoms are to be found for the traffic at competitive freight rates, the traffic must necessarily go to other countries in foreign bottoms. Up to the present there is no reason to expect any other result.

BRITISH SOUTH AFRICA.

DECLINE IN TRANSVAAL IMPORTS—COUNTRIES AFFECTED.

Consul John H. Snodgrass, writing from Pretoria, says that during the first three quarters of 1907 the 275,000 white people of the Transvaal imported goods to the value of $59,353,460, as against $68,879,810 for the previous year, and about $77,000,000 for 1904. He discusses the trade details as follows:

The total exports for the nine months period of 1907 amounted to $103,147,360, of which $95,978,635 was the value of the gold mined within this colony; $7,320,115 represented diamonds, and the exporter of South African produce came far behind with approximately $3,500,000. It is quite evident from these figures that the Transvaal is not spending as much with the outside world as formerly, though the diminution in population may make up for part of the deficiency. There has been a general exodus of white settlers for the past three years, and the tide is not yet turned in the other direction. In fact, the present government does not invite immigration just now for the reason that they have nothing to offer to poor settlers. In truth, under the new immigration law, that went into effect on the first of the year, it is difficult for persons of small means to enter.

INTERCOLONIAL SUPPLANTING FOREIGN TRADE.

A comparative statement of imports into this colony for the year 1907 with previous years is interesting inasmuch as it is quite evident that the colonists are purchasing more and more from each other in the way of produce, and the demand for canned products is gradually growing less.

Imported malt liquors during the nine months in question amounted to only $137,500, which represented 179,336 gallons of imported beer and ale; $50,000 less was spent on the beer bill than for a similar period of 1906. Having given this check to the producers of malt liquors, the people of the Transvaal are limiting the whisky trade. In 1906, 450,220 gallons of spirits, valued at $939,840, were consumed; in 1907 that was reduced to 435,978 gallons, valued at $850,250. The consumer was equally temperate in the use of wines, reducing his bill from $108,420 in 1906 to $97,295 in 1907; the heaviest loss was felt by over-sea exporters, as a great deal less champagne was consumed than formerly. This trade dropped from 10,643 gallons, worth $88,880 in 1906, to 8,954 gallons, valued at $25,390 in 1907.

DECLINE IN TOBACCO, FOOD, AND DRINK.

The same retrenchment was carried on with respect to tobacco. Here a reduction of $105,000 was effected in the nine months. However, the smoke bill amounted to $843,830, of which the neighboring colonies received benefits to the amount of $591,685, while the over-sea bill aggregated $222,145. This account, however, does not include a vast sum spent in purchasing the local production. It is estimated that for each man, woman, and child in the Transvaal the round sum of $5 per year is spent for tobacco. The cigar trade fell off from $200,000 in 1906 to $120,775, but cigarettes evidently were

in favor and increased from $344,565 to $352,645. Analyzing the smoke bill, it is found that $360,000 was for pipe tobacco, $121,000 for cigars, $355,000 for cigarettes, and $10,000 for snuff. Less tobacco meant fewer pipes, and only $58,000 was spent on briar and calabash pipes, as compared with $73,000 last year.

On food and drink, as a whole, the Transvaal spent, roughly, $500,000 less in the first nine months of 1907 than in the corresponding period of 1906, the bills having been, respectively, $15,608,700 and $16,116,275. This decrease does not affect all articles of consumption. There were 2,000,000 fewer eggs imported; 3,000,000 pounds more of beef; 2,000,000 pounds less of mutton; 200,000 pounds less of pork, and $30,000 worth less of poultry and game. With fewer eggs, there was a greater demand for bacon, the imports of which went up from $377,645 in 1906 to $379,460 in 1907, the American exporters reaping the benefit. Imports of butter went up from 3,253,367 pounds in the 1906 period to 3,458,852 in 1907. The consumption of rice rose from $360,000 to $470,000, this being due entirely to the Chinese population on the gold fields.

FURNITURE, HARDWARE, JEWELRY, ETC.

Big shrinkages are noticeable under the heading "furniture." For example, in 1906 the Transvaal imported $120,000 worth of bedsteads; last year it was content with expending $47,000 on the same articles. Billiard ware dropped from $32,000 in 1906 to $14,000; carpets from $137,000 to $36,000. Imports of furniture as a whole declined by over 50 per cent—from $1,387,465 to $547,040. Hardware dealers were equally affected, the imports having sunk from over $2,000,000 to less than $1,500,000; $150,000 less was spent on jewelry than in the previous year. The demand for printing paper decreased from $178,015 to $170,695. It required $32,000 worth of blacking, as compared with $18,000 in 1906, but there was a lesser demand for musical instruments—$128,000 having been spent, as against $210,000 the previous year. Phonographs and accessories were sold to the value of $16,000, in comparison with $13,000 the year before; $327,000 was spent on bicycles, as against $400,000 the previous year, but motor cars represented $332,935, a decrease of about $15,000.

The cause for the great fluctuation in trade is due principally to the severe industrial depression which continues over all of British South Africa. It is a strange state of affairs which appears unexplainable; the country is producing more valuable minerals, such as gold and diamonds, than before, yet there are more instances of extreme poverty than was ever known in the history of the country, even though it has passed through several such crucial tests in the past twenty-five years. One fact, however, is apparent; the numbers of white people are gradually decreasing and their spending power has been growing less.

SALES OF AMERICAN GOODS.

For the first nine months of 1907 American trade with British South Africa amounted to $7,754,535, or 7.8 per cent of the total imports, in comparison with $10,838,770, or 9.8 per cent of the aggregate imports for 1906, a falling off of 2 per cent. During the same

period, out of a total of $99,101,510 paid for over-sea merchandise the British Empire secured about $71,000,000 of the trade, equal to 71.2 per cent, in comparison with $79,000,000, or 68.9 per cent for the previous year.

Germany nearly held its own, enjoying 7.5 per cent of the trade in 1907, as compared with 7.6 per cent in 1906, there being but little difference for the past year in its total business with British South Africa, as compared with that of the United States.

The Argentine Republic sustained a loss of $380,000 and dropped from 3.4 to 2.1 per cent, this loss being due mainly to the partial elimination of cattle disease throughout South Africa, so that fresh meat is again being used instead of the frozen product.

Although the United States suffered equally with other countries it still has a firm hold upon many articles of consumption and general use, as the following import figures for the first nine months of 1907 will show:

	Per cent.	Equal to—		Per cent.	Equal to—
Animals, living	13.5	$56,100	Hardware, all other	10.4	$35,000
Brush ware	18.1	36,000	Agricultural implements	47.8	450,000
Clocks and watches	27	28,000	Lamp ware	21	25,000
Flour	11.1	100,000	Agricultural and water-boring machinery	44.6	420,000
Fats and dripping	36.6	9,000	Mining machinery	16.8	459,000
Fruit, dried	34	45,000	Engine and machine oils	74.3	230,000
Fruits, bottled and tinned	38.6	40,000	Soap	20.7	26,000
Lard	84.8	170,000	Carts and carriages	62.2	75,000
Meats, tinned	55.4	175,000	Wax, paraffin, and stearine	68.4	560,000
Oil, salad	35.8	26,000	Wood, unmanufactured	29	350,000
Vegetables, preserved	13.4	15,000	Wood, plain and grooved	25.2	140,000
Fencing wire	51.7	320,000			
Tools	42.4	70,000			

Though there had been a continual falling off of American imports for the greater part of the year, the month of August showed a remarkable change, the value of American merchandise amounting to $1,168,775, as compared with $936,905 in the similar month of 1906.

AMERICAN CANNED GOODS' POPULARITY—OTHER ITEMS.

Canned beef, which for some time had been little sold, showed a phenomenal increase of 300 per cent, and it is apparent that American tinned meat will be hereafter accepted as the prime article. There was a falling off in American flour imports from $42,000 in 1906 to $17,000, due mainly to the Australian millers being able to place their products upon the market at a cheaper price.

Agricultural implements imported from the United States increased from $39,000 in 1906 to $80,000; builders' hardware, from $22,000 to $36,000, and electrical machinery, from $6,000 to $11,000. Pipes and fittings went up from $2,200 to $17,000. Canned meats rose from $2,300 to $6,000; typewriters, from $3,700 to $7,200, and wire, from $25,500 to $47,000. In mineral oil there was a drop in the demand to the value of $47,000, but in lubricating oil there was an increase of about $30,000; furniture sustained a loss of $4,000, while timber gained $20,000; clocks and watches rose from $3,500 to $5,300: tobacco, which was sold to the amount of about $75,000 in August of 1906, dropped to $62,500, but in unenumerated articles there was a gain of $125,000.

FRENCH IVORY COAST.

FOREIGN TRADE STATISTICS OF AFRICAN COLONY.

A report from Consular Clerk Milton B. Kirk, of Paris, states that the commercial movement of the French colony of the Ivory Coast for the year 1906 reached the total sum of $4,107,378, a loss of $48,122 under the year 1905, the details being at follows:

The imports were $2,252,651, a loss of $429,149 compared with the year 1905. France supplied 30.4 per cent, or $657,122 worth of the imports; United Kingdom and colonies, $1,118,017; Germany, $211,901, and the United States, $77,072, the principal importations from the latter being as follows:

Articles.	Value.	Articles.	Value.
Canned goods	$8,743	Cotton textile	$340
Flour	1,219	Linen, alpaca, and hair textiles	598
Rice	1,025	Chairs	437
Tobacco in leaf	44,757	Wood pieces for carpentering	1,389
Wood for construction	1,732	All others	780
Alcohol	8,423		
Coal	2,579	Total	77,072
Mineral oil	5,050		

The exports of the Ivory Coast in 1906 aggregated $1,854,727, an increase of $381,027 over the preceding year. The principal article was vegetable oils, which are sent mostly to England and France.

INDUSTRIES AND LABOR.

LABOR AND WAGES.

BRITISH INDIA.

COMPENSATION OF RAILWAY EMPLOYEES—SERVICE PERIOD GRADATIONS.

Consul-General William H. Michael, reporting from Calcutta, says that the remuneration of train men in India compares very favorably with that in England, according to a statement made by one of that avocation who has served in both countries, to which he adds:

The East Indian Railway, standard gage and probably the most important line in India at this time, is taken to illustrate the service and compensation of train men in India. It is generally understood that the employees on this line get more money than on any other broad-gage line in the country.

On the East Indian Railway, the untrained would-be railway man is engaged for the locomotive running department as a fireman at $20 a month, if he is a European, or $16.66 if he is a native. In either case, at the end of some six months' service he receives an increment of $3.33 per month, if his service and conduct have proved satisfactory. Overtime for actual work performed brings the whole to about $33.30 per month. After a period of from four to five years' firing he becomes an assistant shunter at $30, and twelve months or so later a full shunter on $33.35 or $30, as the case may be, plus overtime. Another year, or little more, sees him an engineer beginning on $40 per month, plus overtime, which brings him in a total amount of some $66.65.

The following table is illustrative of the salaries drawn by European and Indian engineers on the East Indian Railway at different periods of their service, up to the maximum obtainable:

Year.	Grade.	Salary.	Approximate overtime (mileage or otherwise) allowance.	Approximate total.
First	Second class freight	$40	$26	$66
Second	do	46	30	76
Third	do	53	33	86
Fourth	do	56	38	95
Fifth	First class freight	60	43	103
Sixth	do	63	45	108
Seventh	do	66	53	120
Eighth [a]	Passenger	70	58	128
	Passenger or mail	73	63	136
	Mail	80	70	150

[a] Promotion from this stage, except in the case of covenanted drivers, is by selection and not automatically by length of service.

WORKSHOP WAGE SCALE.

In the workshop department of India the employees are at first employed on probation, and are paid at a daily rate according to their

qualifications. On being confirmed in the service at the end of the probationary period, the employee is placed on a monthly rate of pay as per the following schedule, which, however, does not apply to an experienced mechanic, who is not started on the lowest pay:

Year.	Substantive pay.	In charge of single pit.	In charge of double pit.
First	$26.66	$33.00	----------
Second	30.00	36.00	----------
Third	33.33	40.00	----------
Fourth	40.00	46.66	$53.33
Fifth	46.66	53.33	60.00
Sixth	50.66	56.66	63.33
Seventh	53.33	56.66	63.33
Eighth	56.66	56.66	63.33
Ninth	60.00	60.00	66.66
Tenth	63.33	63.33	70.00
Eleventh	66.66	66.66	73.33
Twelfth	70.00	70.00	76.66

Eight hours constitute a day's work, and, in addition to the maximum salaries in each grade given, overtime can be earned. This is reckoned at time and a half for any time worked in excess of the ordinary working hours, except on holidays, when one-eighth day per hour for the ordinary working hours, and time and a half for any period in excess of these is given. Thus, if a man works eight hours upon a gazetted holiday he receives two days' pay, and if he works a further four hours, or twelve hours in all, he receives another day's pay, or three days altogether.

Covenanted mechanics usually come out upon $60 plus charge allowance and overtime, rising to $70 plus the same. Meter-gage lines pay generally less in some cases than standard-gage lines, notably the Assam-Bengal and the Bengal and Northwestern railways; the wage is considerably less to the few European and East Indian drivers, firemen, and mechanics that they employ. Still, with almost every class, the scale is higher than in England.

SPAIN.

REGULATION FOR EMPLOYMENT OF WOMEN AND CHILDREN.

Consul-General Benjamin H. Ridgely, at Barcelona, sends the following account of a new Spanish law restricting the employment of women and children in that country:

The law in Spain, which already fixed the maximum working hours for children between the ages of 10 and 14 years, limiting them to six hours in mills and other industrial establishments, and to eight hours in shops and offices, and which further prohibited them from being employed on night work, has until now made no regulations against the employment under any circumstances whatever of women and children in certain harmful branches of industry.

A Government decree has, however, now been published specifying those trades and processes of manufacture in which the labor of women under 25 years of age, and of children of both sexes under the age of 16 is to be prohibited, owing to the danger from poisonous fumes or dust, risk of fire or explosion, and injury to health.

Children under 16 years of age are also debarred from working any machines by means of pedals, such as sewing machines and others, or

machines which are put in motion by a handwheel; neither are they to be employed in operating hand or circular saws, mechanical planes, chisels, drills, or other cutting machines unless an apparatus be attached to them which will effectually prevent the possibility of accidents.

Boys under 16 years of age are not to be allowed to lift or carry weights exceeding 22 pounds, nor to push or draw loads necessitating a greater effort than that required to propel on level ground the following weights under the conditions stated:

	Pounds.		Pounds.
Trucks running on rails:		Carts drays, etc.:	
Boys under 14 years	400	Boys under 14 years	60
Boys between 14 and 16 years	600	Boys between 14 and 16 years	100
Girls under 14 years	300	Girls under 14 years	40
Girls between 14 and 16 years	500	Girls between 14 and 16 years	80
Wheelbarrows: Boys between 14 and 16 years	80	Carrier tricycles: Boys between 14 and 16 years	150

The weight of the vehicle is included in all the above figures.

ENFORCEMENT WILL GREATLY AFFECT INDUSTRIES.

Quite a large number of industries would be affected by the rigorous enforcement of this law. The labor of women under 25 years of age and of children of both sexes under 16 would be stopped in all chemical works, match factories, type foundries, and glass and lead works, nor would they be employed in painting or decorating toys with arsenic or lead colors, or in sharpening or polishing metals.

They will also be prohibited from being employed in the manufacture of celluloid, ether, cartridges, and explosives of all kinds, petroleum, and all essential oils and varnishes, while slaughterhouses and places where animal refuse is treated are also closed to them. The following are sectional industries in which female and child labor will not be allowed:

Sawing and polishing marble and other stones; cleaning and carding cotton blankets; pulverizing sulphur; producing zinc white by means of combustion and condensation; lime and cement kilns; grinding cork to dust; cutting and polishing horns, shells, and bones; tanneries where much dust is produced; pulverizing all kinds of drugs; enamel works where the raw materials are ground; handling wool, hair, or feathers where dust is produced; carding flax, hemp, jute; porcelain works, mines, quarries, and wherever dry minerals are pulverized; paper mills where the rags are sorted and prepared and in a number of other processes requiring the operatives to work in an atmosphere charged with dust; tobacco factories, in opening the bales, sorting the dry leaf, in the fermentation of the leaf, in the drying process, in inclosed sheds, etc; tin soldering; lacquering metals; dye-works where poisonous materials are used, and in all processes where poisonous fumes or dust are liable to injure the health of the workers.

In the cotton industry the only section, apart from the manufacture of cotton blankets, which comes under the notice of the new act is the "gassing" process. In connection with the foregoing regulations it may be stated that the supply of labor, however, is in excess of the demand.

GERMANY.

NUMBER OF WORKERS AND WAGES PAID IN SAXONY'S TEXTILE INDUSTRY.

Consul Southard P. Warner, of Leipzig, states that the importance of Saxony as a textile center is well shown by interesting figures which have been published by the imperial insurance office, from which he compiles the following:

During the twenty years from 1886 to 1905 the number of insured workmen in the German textile industry increased from 473,700 to 732,500, or 55 per cent. In Saxony the number of textile workers increased from 116,000 to 225,300, or 94 per cent. In 1886 Saxony employed about 24.5 per cent, and in 1905 about 30.7 per cent of all persons engaged in textile manufacturing in Germany. The total wages paid in Germany to textile workers increased from $62,118,000 in 1886 to $122,570,000 in 1905. Those in Saxony increased from $14,756,000 in 1886 to $36,652,000 in 1905.

The following table gives the number of insured workmen and the wages paid in the textile industry in each of the six districts of the German Empire for the years 1886 and 1905:

Districts.	Persons insured.		Per cent increase.	Wages paid.		Per cent increase.
	1886.	1905.		1886.	1905.	
Saxony	116,000	225,300	94	$14,700,000	$36,700,000	150
Northern Germany	105,000	124,000	18	13,600,000	21,900,000	61
Rhineland-Westphalia	92,300	138,800	50	13,600,000	27,100,000	99
Southern Germany	64,500	119,200	85	8,300,000	18,300,000	120
Alsace-Lorraine	57,500	67,200	17	8,300,000	11,200,000	35
Silesia	38,400	58,200	52	3,600,000	7,400,000	106
Total Germany	473,700	732,500	55	62,100,000	122,600,000	97

As will be seen from the foregoing statement, Saxony shows the greatest increase in the number of insured workmen and also in the wages paid.

AVERAGE WAGES—BENEFIT OF TEXTILE SCHOOLS.

The average of the yearly wages paid in the German textile industry in 1886 was $128.44. In 1905 the average was $163.66, an increase of 27 per cent. The following table shows the average yearly wages paid in the six districts for the years 1886 and 1905:

District.	Average yearly wages.		Per cent increase.	District.	Average yearly wages.		Per cent increase.
	1883.	1905.			1886.	1905.	
Saxony	$127.33	$162.79	28	Alsace-Lorraine	144.94	166.36	15
Northern Germany	129.23	176.60	37	Silesia	92.82	126.62	36
Rhineland-Westphalia	147.08	195.87	33	Total Germany	128.44	163.66	27
Southern Germany	129.23	153.75	19				

The textile workmen engaged in the so-called " home industry " are not included in these figures.

In 1895, the figures for the occupation census of 1905 not yet having been published, the number of industrial workers in Germany was 10,270,000, Saxony's share being 1,150,000. The number of persons employed in the textile industry of the Empire was 993,000, or 9.7 per cent of all industrial workers. In Saxony the textile workers numbered 267,000, or 23 per cent of all industrial workers. In 1895 27 per cent of all the German textile workers were employed in Saxony. From these figures can be seen what an important part the textile training schools have played during recent years in the development of Saxony as a textile center. In 1906 the total number of factories in Saxony was 23,000. Of these, 5,300, or nearly 25 per cent, were textile establishments.

ITALY.

NEW NATIONAL LAW REQUIRES ONE HOLIDAY EACH WEEK.

Consul D. R. Birch sends from Genoa the following particulars of the new law, popularly known as "riposo settimanale," or weekly day of rest, which went into effect throughout Italy on Sunday, February 8:

The measure, which is a substantial victory for the working classes of Italy, directs that all industrial and commercial concerns throughout the kingdom must grant their employees a weekly rest of not less than twenty-four consecutive hours. No attempt is made to apply the new law to transportation services, either rail or water, to places of amusement, or to any of the public utilities, as it is the intention of the authorities to permit of absolute freedom for the recreation and amusement of the working classes.

The general sense of the new law is that Sunday shall be the rest day, but it is provided that the period of freedom from work may be given in a day other than Sunday in the following cases:

Industries operated by continuous furnace fires, the work of which must not be interrupted; cheese manufactories; restaurants, bars, cafes, coffee houses, billiard rooms, and public business concerns in general; loading and unloading operations in the port and vessel repairs, transportation by land other than by rail; hiring of chairs and carriages; flower businesses, photographic establishments; private hospitals, bathing establishments, pharmacists; undertakers; newspaper offices, information bureaus, theatrical performances, and public amusements; cigars and salt stores, even if there be offered for sale other articles; industries of public necessity.

The weekly rest may also be granted in a day other than Sunday to all persons employed at industries which operate in open air and subject to interruption by bad weather, and to the following trades permission is given to conduct Sunday business between the hours of 7 a. m. and noon: food products dealers; insurance, emigration, employment, advertisement, and loan offices, and others of the kind; and barber shops.

The concerns which are permitted to keep open their places of business during the morning hours of Sunday may, upon application to the Councils of the Commune, be permitted to observe the rest period on a week day and thus remain open all day Sunday. The disposition contained in the preceding paragraph may also apply to all business places of the communes where the people go usually on Sunday in order to do their buying. [An original copy of the new rest law may be seen at the Bureau of Manufactures.]

BRITISH SOUTH AFRICA.

GOVERNMENT REGULATIONS FOR STORE CLOSING IN THE TRANSVAAL.

Consul John H. Snodgrass, of Pretoria, advises that an official notice recently appeared in the Government Gazette making regulations with regard to shop hours in the Transvaal. The consul presents these as follows, with some comments as to their delayed enforcement:

Chemists and druggists must close at 8 p. m. every evening except on Wednesdays, when they close at 1.30, and on Saturdays at 9 p. m. A prescription of a medical practitioner may be compounded by a chemist, or a medical practitioner's requirements supplied at any hour, upon special demand. [No provision appears to be made for chemists to be opened on Sunday.] Butchers, fishmongers, fruiterers, poulterers, tobacconists, and vegetable dealers, 7 p. m. each evening except Wednesday, when they will close at 1 p. m., and on Saturday at 9 p. m. Newspaper vendors, 7 p. m. on Monday, Tuesday, and Friday, 8 p. m. Wednesday, and 10 p. m. Thursday and Saturday. Asiatic tea room or eating house, or Kaffir eating house, at 8 p. m. every night in the week. All other businesses to close not later than 6 o'clock on Monday, Tuesday, Thursday, and Friday, at 1 o'clock on Wednesday, and not later than 9 o'clock on Saturday.

All shops (except those permitted to be open on Sundays) must be closed on public holidays, and those shops allowed to open on Sundays may only open on public holidays during such hours as prescribed by law. Peddlers and hawkers must suspend their labors half an hour after sunset. At Christmas time and New Year, between December 22 and 31, shops may remain open until 9 p. m., except on public holidays or the day following. A person entering a shop just before closing time may remain not more than half an hour for the purpose of being served.

The government has temporarily suspended the carrying out of these laws. The question arose in a discussion between the large stores and the small shops, the former insisting upon the closing hours being kept to the letter, and the latter contending that unless they were allowed to keep open at night they would be compelled to close their doors permanently. For the time being the small shopkeeper is enjoying the fruits of the little trade that is at his disposal during the early evening.

CANADA.

STATISTICS SHOWING INCREASE OF LABOR UNIONS IN PAST FIVE YEARS.

Consul H. D. Van Sant sends from Kingston the following statistics on Canadian labor unions:

Some of the labor organizations of the Dominion are closely allied to those of the United States, and while national or provincial relationships do not enter into this matter, the by-laws and regulations and generally the local organization and purposes are on similar lines, i. e., the elevation and betterment of labor conditions in the Dominion.

According to the figures of the labor department, the total number of labor organizations formed in Canada during 1907 was 232, and of organizations dissolved 58, being a net increase during the year of 174. Compared with the three preceding years, the returns show a marked increase in the activity of the organization. In 1906 the number of organizations formed was 154, and of organizations dissolved, 85, a gain of only 69. In 1905 there was a net loss of two, the unions formed numbering 103, and unions dissolved, 105. There was an increase of 44 in the number of unions during 1904. The year 1902 alone, since records have been kept by the department, was more active than the season just past in regard to the organization of workmen, the number of unions formed in that year being 275 and of unions dissolved 54, a net increase of 221. Of the organizations formed last year, 51 were formed by railway employees, 43 by metal workers, and 41 in the building trade. Ninety-four organizations were formed in Ontario, 51 in Quebec, 28 in Alberta, and 22 in British Columbia.

PEARLING INDUSTRY.

AUSTRALIA.

FORMER HIGH PROFITS—EMPLOYMENT OF DIVERS.

Consul F. W. Goding, in stating that Australia produces the largest share of the world's supply of mother-of-pearl, and that for quality and luster it is unsurpassed, makes the following report from Newcastle on this industry:

The most important centers of the industry are Thursday Island, Port Darwin, and Broome. In 1901 and 1902 the average price of shell was $2,000 per ton on the London market. As the amount secured averaged 4 tons per boat per anuum, and the expenses were comparatively small, large profits were realized. Naturally competition among the pearlers for first-class divers is keen, with a result that wages and bonuses are good. The divers and crews working the pearling luggers are introduced under agreement with the federal government. They are imported for a period of three years, and, on reaching port, are immediately signed on the vessel's articles, thus bringing them under the operation of the merchants' shipping act. The master is also compelled to furnish a bond of $500 for every man employed, as a guaranty that at the end of three years the man will be deported to Singapore, the port from which the divers are recruited. Formerly the pearlers paid the divers $10 per month, $100 to $175 per ton bonus, and, in many instances, from 5 to 15 per cent for the pearls won. Though arriving as raw coolies, some of these Asiatics earned from $1,000 to $2,000 per annum, with keep.

From $2,000 per ton in 1901 shell has gradually decreased in value, until at the last November sales held in London it had fallen to $600 per ton. The divers, most of whom are Japanese, are well organized, having their clubs and benefit societies, and every Japanese, whether belonging to the crew, tender, or diving staff, is compelled by his countrymen to join. Everything pertaining to the welfare of the members is thoroughly discussed at the meetings, and they usually succeed in whatever demands they make. In the past their demands, whether deemed reasonable or otherwise, have always been granted by the disunited pearlers, but now these are determined to lower the cost of production, which movement has caused a strike.

One of the results of the union has been the success which has attended the "dummying" of boats. The divers soon save enough to purchase their own boats, with others working them ostensibly as owners, who secure the fishing license and transact the business connected with the work on a commission. The act which stipulates that no Asiatic shall hold a license can thus be evaded. The Japanese dominate the situation, for without their aid as divers pearl getting would cease.

MEXICO.

SUCCESSFUL CULTIVATION OF PEARLS CARRIED ON IN LOWER CALIFORNIA.

Consul W. D. Shaughnessy, of Aguascalientes, transmits an article from the Mexican Herald, of February 16, 1908, wherein it is claimed that the honor of being first to discover and put into successful *operation* the secret of cultivating pearls belongs to a Mexican company. *The following* paragraphs are taken from this article:

Under the old system the pearl industry was an uncertain one. Bushels of shells might yield but a few gems or possibly none at all. But this company, which is working under a concession from the Mexican Government, has taken up the cultivation of pearls as a practical industry, and is now operating the largest pearl farm in the world, employing in the harvesting season more than 1,000 people. They are operating in the Gulf of Lower California. The present markets for the company's products are Paris, London, and Berlin, and Hamburg and Bremen for the mother of pearl, which is exported in large quantities.

Two years are required for the growth of an ordinary shell, which forms slowly in layers, like an onion. After two years the shell loses its gem, and, unless opened at the proper time, there is nothing of value within. Mr. Vives, who spent twenty-five years in studying and experimenting, discovered this fact, and thereupon he devised the system whereby the shells are cultivated until the proper time and then opened.

In the first place, the shells are gathered in the season when the eggs are being deposited. These eggs are carefully placed in little artificial channels like the natural bottom of the sea, care being taken in these channels to protect the little "animals" from their natural enemies. At the proper stage they are transplanted into deeper water, where larger boxes continue to protect them. The stock is also inspected and the "dead" ones removed and replaced by "live" shells. In the deeper channels the shells are left to develop, and at the end of two years the harvest is ready. In the deep-water cages, where the pearls develop, the divers can descend without risk.

Three distinct kinds of pearls are produced in the California Gulf, the most valuable, black pearls, ranging close to $300 per carat gold. The next in point of value are the white pearls, about $250 a carat, the price varying with the size and perfection of the gem. The yellowish pearl, although ranking third in value, is, as a rule, first in favor among the feminine admirers because of the brilliancy of the gems. These prices are for the rarest and most perfect pearls.

BOHEMIAN HOME WORK.

EXTENSIVE COTTAGE INDUSTRIES IN THE CARLSBAD DISTRICT.

Consul John Steel Twells, in the following report from Carlsbad, minutely describes the cottage industrial life in that part of Austria, so many of the products of which are sold in the United States:

In the manufacturing districts of Bohemia goods for both home supply and exportation are not only produced in factories, but to a great extent the raw material is given to men, women, and children and taken home, where all members of the family engage in the work of producing various articles which are sold to the home trade or exported to the foreign countries.

This method is known in Austria as "Hausindustrie," or home work, and in all parts of the country where textiles, glass, lace goods, gloves, etc., are made, men, women, and children obtain their simple living by this means, and consequently it is of great importance to thousands of poor people living in the small villages adjacent to factory centers, enabling them to make a living, especially during the long dreary months of winter, when no other occupation is possible. Around perhaps the only table in the only room, in a little house, the family assemble, the man, his wife, the grandparents, and children with other members of the family, if there be any. When evening comes on, an oil lamp, a candle, or even chips of wood are the only lights by which they can work. On Thursdays, Fridays, and Saturdays the finished articles are taken to the factories and paid for.

"It is very hard now," said one of the lace exporters from Neudek the other day, "to get people in summer to make laces. They prefer to go to work in *fields or picking* hops, for which they get higher ***wages than by making laces.*** Children get 8 cents a day at that time

and adults from 25 cents to even 40 cents, and of course we can not afford to pay such high wages for lace making."

GOVERNMENT INTEREST IN IMPROVEMENT.

The Austrian Government, desirous of improving this sad condition of laborers, is at present preparing a new law which has been handed to the chambers of commerce for their consideration and judgment. The following gives the numbers of persons in Bohemia who do home work:

Aussig	667	Leipa (cloth, linen)	3,916
Braunau (linen)	4,786	Leitmeritz	210
Dauba	54	Reichenberg	2,256
Deutsch Gabel (weavers)	4,695	Rumburg (weavers)	7,819
Friedland	498	Senftenberg (textile, linen)	10,054
Gablonz (glass beads and cheap jewelry)	9,147	Teplitz	1,378
Hohenelbe (textile)	2,514	Tetschen (buttons, linen)	3,068
Koeniggraetz	1,182	Trautenau (linen)	4,936

In the district of the Chamber of Commerce, in which parts of the consular districts of Reichenberg, Carlsbad, and Prague are situated, 105,897 persons do such home work as has been described. They constitute more than one-fourth of the entire population of that commercial district. In the Reichenberg section 68,649 persons are engaged in home work, i. e., outside the factories. They make mostly textile goods, but also embroidered, knitted, worsted, and crocheted goods, which are more or less dependent upon the textile trade.

Next comes glass, stone, earthen ware and clay goods, in which 16,596 are engaged; three-fourths of these workers belong to the glass trade, which is one of the oldest home industries of Bohemia; 8,168 persons make stays, gloves, head covers (caps, hats), and 8,168 do cleaning work at home; 6,427 make wooden, matted, turned, and carved goods; and 3,320 metal goods, chiefly metal turners. In the Erzgebirge, which belongs to the consular district of Carlsbad, 6,000 persons are engaged outside the factories with straw and bast platting. The raw material—simple wheat straw—comes from the hop district of Saaz, while bast or wooden chips are made from Russian ebony wood.

NUMEROUS ARTICLES OF PRODUCTION.

In the district of Senftenberg are located the basket makers and the reed twisters. Mats, pockets, and slippers are made of reed, rush, etc., which are likewise used for building purposes, especially for reed mats, and articles for smokers (cigarette and cigar holders, etc.). In northern Bohemia and also in some southern parts of Bohemia, as in the districts of Muenchengraetz, Neupaka, and Senftenberg, are the shoemakers' villages and towns, mostly inhabited by workers who make parts of shoes at home for the wholesale makers.

Their goods are called "market goods," because they are exhibited and sold on stands at the fairs in the larger manufacturing districts which are held every week or month, or several times in the year, especially in the districts of Bohmisch-Kamnitz, and at Bensen, Tetschen, and Schluckenau. Wooden slippers are made in the district of Rumburg; braces at Teplitz; gloves at Bilin, Kaaden, and at Prague, also at Joachimstal and Abertham. At Schoenau and Hainspach (district of Schluckenau) the ribbon weavers are located, and in a *southwestern* direction from Rumburg are the wood weavers or

makers of Sparterie goods, while at Rumburg and Bohmisch-Kamnitz are the smoking-pipe makers.

In many of the forest villages barrels are made, which trade is largely encouraged by the chemical factories at Aussig, that employ several thousand workmen. In the southwestern districts of the Boehmerwald are many hundred makers of chip boxes; they make also agricultural and kitchen goods of wood, frames for brushes, toothpicks, and wood carved goods. Altogether about 3,000 makers of wooden goods are scattered in the various villages of southern and northern Bohemia.

CONFORMING TO CHANGING DEMANDS.

Other kinds of home work depend upon the factories near the villages. In the Riesengebirge paper bags and horn or stone buttons are made; near Reichenau and Gablonz snuffboxes were formerly made, but when the use of snuff decreased a new trade began, viz, the making of cheap oil paintings on wood, tin, and linen. This developed from the little paintings which were formerly made on the snuffboxes; the paintings were enlarged and the new industry of making oil paintings was started. The emigration to the United States from Bohemia is partly connected with this kind of work. If the market is good, then all the family works day and night and makes a living, but if the market is bad, they lose their employment and lead a very poor life. The wages are extremely low. In the Adlerhills weekly wages of $1 to $1.20 are paid, but as there are many weeks during the year when no work can be had the average weekly earnings are not larger than 80 cents. In good times husband and wife work alternately eighteen hours a day. If the scanty habitations, the rough climate, and the poor soil are taken into consideration, some idea can be gained of how great is the poverty in these mountain villages. Yet it is considered of great value that chip-box making has been introduced, because the workers, mostly women and children, earn 80 cents to $1.40 per week; and linen-shirt buttons are now made, by which wages of 60 cents to 80 cents a week are earned. Weavers who make at home silk and Jacquard and art work earn $1.40 to $4 a week. The straw and bast matters earn from 20 to 40 cents a day, but after the "season" the wages are lowered. Wood carvers earn $1.20 to $2.80 a week, and the brush makers at Gabel from $1.60 to $2 a week. The wood carvers at the Wittigtal earn $1.60 to $3.60 a week, and the wood and mat makers at Niemes from $1.20 to $1.60 a week.

INCREASING INCOME—ADJUSTMENT OF INDUSTRIAL RELATIONS.

In this consular district home work is often done to increase the income. People go to work during daytime and in the evening they spend their time by making certain goods. The artificial-flower makers earn $1 to $2.40 a week. At Prague and Joachimstal, Abertham, etc., in the consular district of Carlsbad, gloves are made. The manufacturers hand the leather out to contractors called "Natfaktoren," who distribute the work among the people. Hundreds of women are thus employed in this district who earn $1.20 to $1.60 a week. There are other female home makers of straps, whip makers, cutters of visors for caps, and umbrella makers.

To many thousands of persons home work gives employment. There are districts in which the population lives entirely from this

kind of work, and although they make a poor living it is a benefit to them. On the other hand, it must be admitted that home work strongly competes with the smaller manufacturing trades. In Vienna, for instance, there are 100,000 to 120,000 home workers making shoes for factories. There are three classes, viz: (1) Masters who work with assistants; (2) journeymen who work for weekly wages and take on assistant hands, the latter getting food and lodging and very small wages, and (3) "Pfuschers" who work without assistants.

The difficulty with which the Austrian Government has to cope is that the small trades people have great difficulty to compete with home work. Many thousands of both classes make an honest living, but one class is pressing the other, and now the Austrian Government is studying a problem to regulate home work in such a way that it will no longer affect the small manufacturing trades.

CHINESE INDUSTRIAL ENTERPRISES.

GROWING INTEREST IN ESTABLISHING MANUFACTURING PLANTS.

Consul Wilbur T. Gracey, of Tsingtau, China, transmits the following translation from a German newspaper published in that Chinese port:

For years Yuan Shihkai has felt that one of the best ways to raise the industrial welfare of the people of North China was to start industrial enterprises, and in pursuance of this idea he has been earnestly at work carrying out his plans. Up to the present it can hardly be said that his plans have been attended with great success, but the start has been made and with wise regulations in the future the start made will bear good fruit. It must be remembered that private enterprise throughout the Empire has to contend with much opposition.

The main schemes developed at Tientsin thus far include woolen mills, dye works, tannery, furniture factory, soap works, machine shop, cigarette factory, match factory, and an armory.

The largest single enterprise is the "Chih jan kung tsze" (weaving and dyeing company), which works with a capital of $50,000 divided into shares of $5. All shares are Chinese owned, relatives of Yuan holding $10,000 worth. In the weaving department 150 Chinese are employed at 100 Japanese looms, directed by 3 Japanese foremen. The looms cost $15 each. In connection with the works is a small factory where all sorts of leather and wool articles are made. All goods are well made and sell for a low price, owing to the cheap labor. The dyeing department employs 100 people and is an extensive place, having large rooms and yards for drying cloth which has been dyed. Synthetic indigo is used exclusively.

TANNING, WEAVING, SOAP, AND TOBACCO WORKS.

The Hsioa Pi Chang is a large tannery, working with a capital of $80,000 divided into $40 shares, all held by Chinese, the largest shareholder and leader of the enterprise being a former compradore of the Hongkong Bank, Wu Jimpa. The goat and beef hides, coming exclusively from Shantung, are worked by some 100 employees. Machinery is British, but the leather produced has lost greatly in quality, as the Englishmen who installed the plant are no longer connected with it. The company is at present adding a small weaving plant to its present works, 20 English looms having been recently installed. Many smaller industries have also been started and all sorts of leather and cloth goods are being made cheaply, but serviceable.

The "Tschiao I Pin Tsao So" is an attempt to make all sorts of educational apparatus and thus become independent of foreigners in this line of goods. Here such goods as machine models, electrical models, anatomical figures, stereometric figures, drawing boards, and T-squares are made, all of which answer their purpose well.

The "Tsai I Kung Tsze" is a soap factory started by a rich merchant, Sung. The products are well liked and find a ready sale. Machinery is Japanese. Employees number 30 to 40. Another large soap and candle factory with a capital of $80,000, owned by Chinese exclusively, is now planned.

A cigarette factory, employing mostly native tobacco, is finding a good market for its goods among the natives. Packages of 10 cigarettes with mouthpiece sell for 1 to 1½ cents. Foreigners, of course, can not smoke these cigarettes, which have a bad taste.

ENTERPRISES AT PEKING—TIENTSIN INDUSTRIAL SCHOOL.

In Peking there are also a number of new enterprises started and planned. These include a glass factory which two Germans put into operation some time ago, a large paper factory planned by the Chinese Government to be run in conjunction with their printing plant, a newly organized company which will enlarge and modernize a small cotton mill, and the opening of a modern flouring mill, for which official permission has lately been obtained.

Then there are a number of ancient industries which seem to be reviving about the capital, chief among which are the establishments for weaving carpets out of camel's hair and the cloisonné factories. Near Tongshan, where the coal beds furnish cheap fuel, great brick and pottery kilns have recently been opened. Another rapidly extending industry is found in the whisky stills in and about the great millet regions of the north.

In order to educate the young people of the country a number of so-called industrial schools have been opened in Tientsin during the last few years, where for a small fee students are given a manual training. The leading one of these schools at present is the "Shih hsi kung chang," which is under the direction of Kung I-chü, the head of the trade and industrial bureau of Chili. The head master of this school is the former salt taotai of Tientsin, a son of the former Governor Chou-fu. The school is a sort of stock company, with shares as low as 50 cents so that all people may be interested, but there is also an annual provincial subvention of $8,000. Training is given in dyeing, weaving, soap making, art carpentry, pottery, silk embroidery, match making, and porcelain painting. All machinery used in education is of Japanese origin. There are at the present time some 200 scholars, ranging in age from 12 to 22. The course of study extends over three years, but if the scholars desire and are willing to continue to pay fees they can remain longer and receive additional training. A class for girls, in which silk embroidery is taught, is a recent addition. Forty teachers and assistants compose the faculty. All goods made are sold in a store belonging to the school, which is located in the native city.

OTHER TRAINING SCHOOLS.

There are, furthermore, two small schools in Tientsin maintained by private persons. Of these the "Chü pu nü kung chang" teaches about 50 girls, while from 20 to 30 boys receive training at the "Chi pu kung chang," both schools teaching weaving exclusively, for which they use Japanese looms. The latter of these two organizations was started by an influential paper about a year ago. It was hoped to raise $25,000 by popular subscription and found a great school, but as only a few thousand dollars were subscribed, the present small school was all that could be started.

In this connection a penal institute, started some years ago by Yuan Shih-kai in Tientsin deserves attention. Here some 600 petty criminals and 300 vagabonds are at all times undergoing training, while the place is to be enlarged at once so as to also accommodate 200 women. All of the inmates are kept at work, earning an income for the province and at the same time learning something useful themselves. Completed goods are sold at special stores in the native city. Japanese looms and occidental sewing machines are in use, the occupations including weaving, dyeing, paper making, carpentry, carpet weaving, Chinese clothes making, native and foreign shoemaking, and match manufacturing. A similar but far smaller school is located at Pao ting fu, and another is planned for northern Chili. The Tientsin place is called Hsi i so.

IRON WORKS—INDUSTRIAL INDEPENDENCE.

Attention may also be called to the Peiyang Iron Works, employing 210 men. These works were formerly under a Japanese, but an American has recently been substituted. All foremen, however, are natives, while all the machinery is British. The output includes chiefly simple machinery and castings, such as

pumps, printing presses, grist mills, and, of late, sabers for soldiers and police. Most of the iron used is from Hupeh province, but some comes from England, where all of the machinery also originated. The works can also undertake extensive repairs on machinery, for example, such as is used in the mints.

Recently the Government at Peking has also devoted much attention to this matter of making the Empire industrially independent, and an edict was recently sent to all provinces instructing the officials to lend all possible aid to undertakings tending to better the industrial conditions of the land. The ministry of war has recently memorialized the throne, advocating the establishment of a factory for the manufacture of all leather and cloth goods needed by the army. The proposed capital of $800,000 should be put up half by the Government and half by private persons. Thus it can be seen that at least a part of the officials and the rich merchants are really desirous of putting the country on a sounder economic basis and making it as independent as possible of foreign manufactures.

GERMAN MACHINERY BUILDING.

GREAT ADVANCE IN THE MANUFACTURE OF FARM IMPLEMENTS CLAIMED.

In furnishing the following information relative to the manufacture of machinery in Germany, and its steady advance in quality, Consul H. W. Harris, of Nuremberg, reports that, alert as the producers are to enter the foreign field, they first of all are seeking to supply the home market:

For many years American sewing machines, typewriters, office furniture, shoes, agricultural implements, etc., met practically no competition in the German market. Their excellence was everywhere recognized, and they had a valuable field practically to themselves. The German manufacturer recognized a demand which he was not in position to supply, and with but little protest he saw it supplied from abroad. As the home product in these and in other similar lines has improved, the manufacturer has not been slow to assert its excellence, and the German public is not infrequently notified that it is no longer necessary to buy American sewing machines, American shoes, American agricultural implements, etc.

AMERICAN AND GERMAN FARM IMPLEMENTS.

A recent writer, in a leading German trade journal devoted to agricultural machinery, in a well-considered article takes exception to indiscriminate appeals to patriotism as against the admission of American farm implements. He suggests that the proper way to meet American competition in this branch of manufacture is by perfecting the home product and by a better selling organization. He reviews the causes which have tended to secure the high degree of excellence in American agricultural machinery, and concedes that the American mower and reaper still have a substantial foothold in Germany. He takes the view, however, that German mowers and reapers have steadily improved, so that with a more effective selling organization they should secure the German trade. He places much emphasis on high-grade machinery and selling methods as the proper means to this end rather than what he calls an overzealous patriotism.

Statistics are quoted by the writer in question to show that in most branches of farm-implement manufacture the German factory is now controlling the home market. Thus he shows that during the first eleven months of 1907 in several classes of such implements imports were small, while exports of the same classes of merchandise were *important.*

The weights, in metric tons of 2,205 pounds, and values of these imports and exports for the period named are stated as follows, values being figured from the weights and only approximately correct:

Articles.	Exports.		Imports.		Imports from the—	
	Quantity.	Value.	Quantity.	Value.	United States.[a]	United Kingdom.
	Tons.		*Tons.*		*Tons.*	*Tons.*
Plows, iron	16,074	$1,722,000	101	$14,400	51	----------
Plows, for power	609	119,000	927	187,500	----------	927
Cultivators, harrows, hand and horse rakes, potato diggers, etc.	2,893	372,000	1,043	149,000	625	----------
Portable steam engines	2,187	601,000	952	249,000	----------	909
Thrashers	5,414	799,000	2,234	342,000	89	1,945
Cream separators	1,063	759,000	652	521,000	----------	----------
Total	28,240	4,372,000	5,909	1,462,900	765	3,781

[a] According to official returns, the exports of agricultural implements from the United States to Germany during the calendar years 1905, 1906, and 1907 were valued at $1,474,145, $1,864,699, and $2,598,047, respectively, a large and steady increase.

GENERAL CONCLUSIONS.

No one can have followed agricultural machine manufacture in Germany for the past ten years and doubt that improvement has been steady and substantial, and that the German manufacturer proposes, as early as possible, to supply the home trade in all its branches and to have his share in the trade of other countries. From now on it will be more and more a question of good materials in the machine, of favorable selling terms, of prompt deliveries to agents and farmers, of liberal advertising, and of such improvements in the machine from time to time as may be required. The conditions which existed six or eight years ago have materially changed, and it behooves the manufacturers of the United States to keep abreast with conditions as they now are.

MATCH MANUFACTURE.

BRITISH INDIA.

DESCRIPTION OF A NEW INDUSTRY STARTED IN A SMALL WAY.

In a previous report Consul-General William H. Michael, of Calcutta, called attention to the opening in India for an up-to-date match factory, which leads him to describe attempts in that direction, as follows:

The Indian Trade Journal recently contained an article on the subject embodying an interview with an officer of the Indian civil service, who says that he recently visited a match factory in Sholapur, India, and was very much interested in the embryo establishment he found there. He said the work was wholly done by hand, yet the product was very satisfactory, and the small plant is paying well. It is only a question of increased capital and more modern machinery when the factory will be paying large profits. The factory employs 16 hands, all natives, and the material used is "surya grass" (Xylia dolabriformis), which grows abundantly in parts of India. The process is thus described:

A chaff cutter set at 2 inches cuts the stalks to the required shape, which are then winnowed to get rid of grass, etc. These are then passed through two

horizontal sieves, which retain only those stems that are of the correct thickness. These are then boiled in paraffin for five minutes and dried in a revolving drum. Some 24 pounds of Burma paraffin go to 7,000 boxes of matches. They are then shaken through a horizontal sifter, which deposits the stems in horizontal layers. These layers are then put into a screw frame, and the stems are now in a horizontal position, held tight by a screw, and are then ready for dipping. By an ingenious arrangement some of the closely packed stems are forced forward, so as to stand out from the mass (otherwise when dipped the compact mass would stick together) and are dipped in a solution of chlorate of potash, sulphate of arsenic, potash bichloride, powdered gypsum, and gum arabic. About 6 pounds of the mixture go to 7,000 boxes of 80 matches each. The ingredients are cheap. Chlorate of potash costs 8 cents per pound, sulphate of arsenic 16 cents per pound, and potash bichlorate 12 cents. The dipped matches are put in a drying frame, and the remainder in the screw frame go through a similar process.

The boxes are made of cardboard; the inner portion, which holds the matches, is cut and pressed by hand into a wooden socket, which shapes it after being gummed. A man working ten hours can make 1,000 inners or 3,000 to 4,000 outers. The proprietor is devising a hand machine which will turn out these boxes rapidly. The outers are put in a frame which holds a gross or so and are brushed over with sulphate of arsenic. Filling is done by hand, and the boxes of matches sell at 26 cents per gross. This small factory, as yet in its infancy, yields a profit of $1.33 per day.

SPAIN.

GOVERNMENT DECLINES TO RENEW PRIVILEGES TO PRIVATE CORPORATIONS.

Consul-General Benjamin H. Ridgely, reporting from Barcelona under date of February 8, says that one of the greatest and most profitable monopolies in Spain is the match monopoly, concerning which he writes:

Much attention is called to the fact that the concession granted to the Compañia de Cerillas y Fósforos, or Match Company, will terminate February 28, 1908, the efforts to arrive at an agreement with the Government for its prolongation having failed.

In the year 1893, the Spanish match manufacturers formed a combine, and succeeded in obtaining from the Government a monopoly for the manufacture and sale of matches in Spain. The following year a number of prominent merchants established what was known as the Compañia de Cerillas y Fóforos with a capital of 5,000,000 pesetas (silver peseta=about 17 cents) for the purpose of taking over the working of the monopoly and paying the annual sum agreed upon between the Government and the manufacturers for the exclusive right to sell matches. The investment proved quite profitable. The last published balance sheet of the company showed that the profits during 1906 amounted to 1,265,152 pesetas (about $215,000). The monopoly controlled the output of 27 factories variously distributed throughout the country, including one at Palma de Mallorca, and handled 432,000,000 boxes of matches annually. It is now understood that the Government will, after February 28, take over the business and operate the monopoly for its own benefit.

Only wax matches are used in Spain, and they are retailed at 5 to 10 centimos (1 and 2 cents) per box, according to size and quality. The cheapest boxes contain 50 very small, thin matches, which retail at 1 cent. The best quality, a larger match in a very pretty cardboard box with a gum-spring lid, containing 50 matches, retails for 2 cents. A third quality in inferior boxes containing 30 matches, retails for 1 cent.

AUSTRIAN IRON PRODUCTION.

LESS ATTENTION TO EXPORT TRADE—EXTENSIVE HOME DEMANDS.

An interesting statement has been published recently by the head of the largest iron and steel plant in Austria concerning the present condition of the iron industry in Austria. The article is summarized by Consul-General W. A. Rublee, of Vienna, as follows:

The fact is emphasized that the Austrian iron industry depends almost wholly on the home market and participates in foreign trade only on rare occasions under particularly favorable conditions and even then only to a moderate extent. The home market has not been stimulated by any particularly great demand in recent years, but showed only the natural expansion due to the gradual growth of the population and to the normal development of modern industrial needs. The growth of the Austrian iron industry is not, therefore, a sudden one as in some other countries, but is on the contrary slow and gradual. It is, consequently, out of the question that a violent reaction should occur, as may be observed in other countries.

The constant development of the Austrian iron industry is illustrated by the business done during the last five years in the more important products of the iron works comprised in the Austrian iron cartel or association. During the five years from 1903 to 1907 the sales of rolled iron were as follows: 1903, 547,030 tons; 1904, 610,720 tons; 1905, 646,580 tons; 1906, 709,940 tons; 1907, 770,660 tons. The sales of pig iron in the same period were: 1903, 173,690 tons; 1904, 208,120 tons; 1905, 219,120 tons; 1906, 246,400 tons; 1907, 285,780 tons. These figures demonstrate the gradual growth of the home market as well as of the iron industry.

The Austrian iron works have met the increased demand of the home market by enlarging their plants and have been able up to the present time to supply the requirements of the market. On the other hand, there is no possibility of an overproduction, not because, as is generally thought, the organization of the cartel regulates the production according to the demand, but because of more fundamental reasons. The particular cause that prevents an overproduction in the iron industry, and even makes it impossible to supply a sudden great demand, is the scarcity of coke, which is essential in the operation of blast furnaces.

OBSTACLES TO GREATER PRODUCTION.

An increase of the Austrian pig-iron production in geometrical progession seems impossible, as the deposits of ore, with the exception of those in Styria, hardly admit of being worked to a greater extent than at present. Even the Alpine Montangesellschaft, the one Austrian company that is in a position to meet the greater iron consumption on account of its ownership of iron mines, is not able to undertake the task because it depends upon the possibility of purchasing the necessary coke in foreign markets. This company is at present meeting the situation by withdrawing from the export business in so far as it becomes necessary to satisfy the home consumption.

This gradual absorption of the export business by the home market is shown by the trade statistics of recent years, as it is to be noticed that in 1907 the export of iron was only about half what it was in 1906. A still further reduction of exports in favor of the home con-

sumption is to be expected in the near future. On the other hand, the import of pig iron shows a continual increase. During 1905 there was an import of 41,690 tons of foundry pig iron, whereas in 1906 this import was 60,390 tons, and for the first eleven months of 1907 it had gone up to 126,610 tons. The home market will in the future, as in the present, have to draw part of its supplies from other countries, inasmuch as even such Austrian blast furnaces as make foundry pig iron are now buyers in foreign markets.

The further expansion of the market in Austria is to be expected on account of considerable extension of the railway systems and the construction of aqueducts in several of the principal cities of the empire.

WATER POWER IN BOHEMIA.

CONSTRUCTION OF MOUNTAIN DAMS FOR THE BENEFIT OF INDUSTRIES.

According to Consul Charles B. Harris, of Reichenberg, great attention has been and is now given in northern Bohemia to the erection of mountain dams, on which he submits the following report:

The manufacturing establishments in this district are mostly located in valleys, along rivers and their tributaries. The water of these streams flows from one waterwork to another, furnishing power for the industries. The water not only is useful, but, unrestrained, would cause great damage in case of flood. For instance, the flood of 1897 was very destructive, causing a damage of $688,000 in Reichenberg alone. In order to combat these floods a Water Association was formed in 1900, which decided to erect six dams in the region of the river Goerlitz-Neisse near Reichenberg. Five of them have been built at a total cost of $1,475,698, that at Harzdorf costing $160,160, Friedrichswald $326,271, Voigtsbach $109,668, Muehlscheibe $209,699, and at Gablonz $669,900.

These dams not only prevent floods, but supply the different manufacturing establishments with power, and are built in such a manner as to be kept half full, one-half being utilized for the supply of water to operate the factories and the other half to hold back the water in case of a flood.

DIVISION OF COST—OTHER PLANS FOR DAM BUILDING.

Every land or waterwork owner whose plant is located below a dam, or who derives a benefit from the same, must be a member of the association, and the membership contributions are regulated according to the benefit the members derive from the dams, either by protection against damage, use of water, or both. The membership rate varies from $2.03 to $1,015 a year. The money needed to pay the cost of constructing the dams named was partly raised by subvention. The Austrian Government contributed 30 per cent, the Crownland of Bohemia the same amount; the governments of Saxony and the province of German Silesia will pay a subvention of about $166,600, while the balance is to be raised by the membership rates of the association.

The Iser Mountains, near which Reichenberg is located, despite abundant forests, are not capable of holding back heavy rains and

other waters. As a result such industrial centers in this consular district as Albrechtsdorf, Dessendorf, Unter-Polaun, Tannwald, and others, have severely suffered, and are now contemplating the erection of dams, the plans of which are being drawn. It is aimed not only to protect the manufacturing establishments, but also the lands of agriculturists, who have also suffered much from an oversupply of water.

Similar dams in the future will be erected in the Giant Mountains, on the Elbe River, and along its tributaries.

EXPLOSIVES IN SOUTH AFRICA.

A MANUFACTORY FOR THEIR PRODUCTION TO BE ERECTED IN NATAL.

Consul Edwin S. Cunningham, relative to the conclusions of negotiations by the representative of an English company for the erection of a plant near Durban for the manufacture of explosives, furnishes the following information for the benefit of American manufacturers interested in that trade in South Africa:

A tract of land has been secured at Umbogintwini, 14 miles from Durban, on which will be constructed the plant for the manufacture of explosives. It is believed that this will be merely the beginning, and that in time ammunition and possibly other articles which this firm manufactures in England will also be manufactured in Natal. The preparation of the land and the construction of the subordinate buildings begin at once, the factory and arsenals will be begun about May, and it is proposed to have the plant in operation before the end of the year. Contracts are being let by the Natal government railways for the construction of 4 miles of railway to connect the lands with the South Coast Line. Eight acres also have been secured fronting Congella wharf for the use of the company in receiving, storing, and forwarding material for the factory.

It is interesting to note that one of the main factors in deciding the selection of Natal instead of some other port for the site is the port facilities afforded by the Congella wharf, which was constructed at an enormous expense primarily with the object of securing the vast timber trade between the Northern Hemisphere and the interior of Africa, but ultimately to provide, from the large area of reclaimed lands, suitable sites for the erection of factories which, it was believed, would be attracted to this port when the facilities were provided. This is the first firm from Europe which has availed itself of these accommodations. Another factor which had weight in Natal's favor was the abundant supply of good coal to be had. The possibility of coal for South American ports furnishing a cargo for vessels, chartered by the company to bring nitrate here, was further urged as an inducement for selecting the chosen site, since the securing of return freight would cheapen expenses.

The expenditure on account of plant and buildings, it is stated, will be approximately $1,000,000; and when in operation the factory will give employment to 200 Europeans, and this number will be considerably increased as requirements demand. Within a reasonable time after operations begin the number will be 600 to 700.

CREATING A NEW VASE.

GERMAN HISTORICAL SOCIETY REVIVING AN OLD ROMAN ART.

According to Consul William J. Pike, of Kehl, there is about to appear in the market a new kind of a richly embellished vase to be called "terra sigilate," which is of interest from a historic and artistic point of view, leading him to summarize a description from a German trade journal as follows:

Recently, in the excavation of Roman ruins, a certain beautiful vase, called in Latin "terra sigilatta," was unearthed. This has come to the attention of a historical and archæological society in Metz, Lorraine, which became so interested in the vase that it approached a manufacturing firm with a view of ascertaining whether it would be possible to manufacture an imitation of this unique vase, because the society wished to present each of its members with a copy of one of these old Roman relics. The manufacturer who was interviewed also became very much interested in this piece of art, being himself an antiquary, and offered his services in trying to imitate this skillfully and dexterously worked out creation of art.

The first process was naturally the study of the composition and the method which had been used by the Romans in embellishing the original, which was a more difficult matter than imitating the exact form. Further, to produce the artistic effect a burning process was necessary, which in the first experiments with the material used made the vases so brittle that they were found to be impracticable. Should further experiments, however, overcome this obstacle, the firm will not only manufacture a sufficient number for the members of the society, but place the same upon the market.

Since similar vases, found only in museums, have already created so much attention from the world of art and admirers in general, it is quite certain that it will be one of the best novelties of real worth which has appeared for some time.

CANADIAN APIARIES.

DECLINE SHOWN IN THE INDUSTRY IN ONTARIO PROVINCE.

Consul H. D. Van Sant, of Kingston, states that according to the latest Canadian government returns the number of hives of bees in Ontario has decreased from 216,734 in 1900 to 166,811 in 1907, and the value from $1,139,559 to $885,196. Of the 33 samples of honey gathered in the Kingston district for analysis by the inland revenue department all were found genuine. In most of the other districts a percentage was found to be adulterated with sugar, cane sirup, and corn sirup.

FOODS AND DRINKS.

DAIRY PRODUCTS.

MEXICO.

CONSUMPTION OF MILK AND BUTTER IN THE FEDERAL CAPITAL.

Several inquiries having recently reached Consul-General A. L. M. Gottschalk from firms in the United States with regard to the milk supply of Mexico City, he supplies the following information:

Business firms dealing in dairy utensils and supplies should be informed that, generally speaking, there is not at present in Spanish America that demand for their products which might be found in other countries, for two reasons:

First, the comparative scarcity of milch cattle and the great importations of milk in its various condensed and tinned forms, cheeses, tinned butter, etc.

Second, the fact that the dietary list of the average Spanish-American family contains very little milk, cream, or butter, as compared with a family in the United States. Even for cooking purposes cream, milk, and butter are often replaced by lard, stock, olive oil, etc.

In this city, which to-day has an estimated population of some 400,000 persons competent to know, the consumption of dairy products is barely what would supply a town of 80,000 in the United States. The average consumption of the city has been estimated from another source at 63,500 liters (16,775 gallons) per diem, but these figures are probably rather high.

SANITARY INSPECTION OF DAIRY PRODUCTS.

Mexico City, like all large capitals, has a board of health, which regulates the sanitary condition of milk and other dairy products, just as it regulates concerning foodstuffs generally, before they may be sold. The milk supply is chiefly from large farms in the valley of Mexico owned by private individuals, some of whom have taken pains at various times to import blooded stock from the United States, Switzerland, and other places, but generally speaking there are no large herds of milch cows. It is said that there may be from 5,000 to 7,000 milch cows in the District surrounding Mexico City. One of these farms (and not by far the largest), at Xolox, near the city, sends in an average of 1,000 liters (264 gallons) of milk every day. Daily milk trains also come in from Pachuca (Hidalgo) a few hours distant away, bringing in milk, and some cheese and butter. The town of Toluca (State of Mexico) has extensive dairy interests, and manufactures a cream cheese which, like that of Chiapas in southern Mexico, has a national reputation. [The local agents in Mexico City for the sale of Toluca dairy products are listed at the Bureau of Manufactures].

Milk costs here at retail 15 to 18 centavos Mexican currency, (approximately 7½ to 9 cents United States currency) per liter

(liter=1.05 quarts); at wholsale, about 11 centavos per liter. Cream costs usually 80 centavos (approximately 40 cents United States currency) per liter, at retail. Butter sells for about 80 centavos per pound. It is rarely sold by the kilo at retail, and imported (American) butter is sold usually at 1 Mexican peso (50 cents United States currency) per pound.

ARGENTINA.

SUPPLY AND CONSUMPTION OF MILK IN BUENOS AIRES.

The following statistics concerning the supply, consumption, and hygienic treatment of milk in Buenos Aires are from the Statistical Annuary of that city for 1906:

While Buenos Aires is the most advanced city of Latin America for the hygienic treatment of milk, when received in the city, the veterinary control at the point of production is entirely lacking for all the companies which provide this vital element to the population. Hygienic precautions and requirements of the companies engaged in the milk trade mark great progress, but, unfortunately, they reach but a minimum part of that which is delivered to the consumers, since in a total consumption of 360,000 liters (95,101 gallons) per day, 210,000 liters (55,476 gallons), are being sold without any guaranty of salubrity.

While Buenos Aires has a very well-organized service for inspecting the hygienic and alimentary conditions of the milk delivered for consumption, that is not enough; the principal inspection and analysis should be made in the country, where the cows exist, from which 93 per cent of the milk consumed in the city is received.

SUPPLY OF MILK IN BUENOS AIRES, BERLIN, NEW YORK, AND PARIS.

The daily consumption of milk in the four cities is as follows:

City.	Population.	Daily consumption.		Consumption per capita.
		Liters.	*Gallons.*	*Grams.*
Buenos Aires, 1906	1,084,113	360,000	91,900	332
Berlin, 1905	1,909,226	750,000	198,197	337
New York, 1906	4,014,304	1,237,000	326,827	308
Paris, 1906	2,660,559	900,000	237,822	338

Buenos Aires receives 93 per cent of its milk supply from the rural dairies in localities within 62 miles of the city, and the remainder is supplied by dairies within the municipality itself. The quantity received by railway amounts to 336,000 liters (88,761 gallons) per day. This is augmented in the summer, when refrigerated milk, sold at suitable places, is a customary beverage for a considerable part of the population. The companies which supply the milk from the rural districts have refrigerating and frigorific cars, for the transport of the product, placed at their disposal by the railway companies, one of which runs 2 milk trains a day—morning and evening.

Berlin is supplied with milk by sellers who contract for the product of localities or farms, concentrate it at certain points, and transport it by railway; by producers who send it to the city in other vehicles, and, lastly, by a number of small producers who have dairies in the city and suburbs. The annual consumption of milk in Berlin is estimated at from 260,000,000 to 270,000,000 liters (68,684,320 and 71,326,030 gallons).

The milk consumed in Paris is produced in the departments or provinces, and in the city itself; 90 per cent is received from the departments, in special milk trains, which are discharged between midnight and 2 o'clock, thus permitting delivery at 4 o'clock in the morning. The milk is collected, by great companies within a radius of 84 miles. The maximum time consumed in the journey is three hours. The milk region is divided to avoid competition. A store, near some railway station, serves as a central point for a radius of 12 to 18 miles. The milk is collected in the morning and in the evening in carts containing from 1,000 to 1,200 liters (264 to 317 gallons). In Paris the milk is *sold in the dairies* (every dairy having from 15 to 20 cows) at from 40 to 60

centimes per liter (7.72 to 11.58 cents per 1.057 quarts). The milk brought from the country is retailed at between 25 and 30 centimes (4.8 and 5.7 cents) per liter. That which is distributed in sealed bottles in the Department of the Seine varies between 50 centimes and 1 franc (9.65 and 19.3 cents) per liter.

The milk consumed in New York is supplied by 187,125 cows distributed throughout five States, viz, New York, New Jersey, Pennsylvania, Connecticut, and Massachusetts. The average consumption of milk is 1,237,000 liters (326,779 gallons) per day, without reckoning 21,000 liters (5,550 gallons) of cream and 12,000 liters (3,172 gallons) of condensed milk.

UNITED KINGDOM.

BUTTER TRADE AGAIN NORMAL—MARGARIN A POPULAR SUBSTITUTE.

Reports from some of the consuls noted a remarkable shortage in Great Britain's butter supplies, an increase of 10 cents a pound in the wholesale price, or nearly 50 per cent, compared with a year preceding, and a general belief that the shortage would last a considerable time. Consul Frank W. Mahin, of Nottingham, now supplements these statements with the following, bearing date of March 9:

The retail price of butter was also increased from 30 cents to 36 cents per pound for best quality, with a possibility of a still higher price. To everybody's surprise, the price inflation lasted barely a month. The wholesale price has fallen back in a few days to nearly its former level, while the retail price has dropped from 36 to 32 cents for best, and will probably soon go to the normal figure, 30 cents. The cause of the sudden decline was chiefly, if not altogether, decreased demand. This resulted from the action of retail dealers, who, losing money on butter, induced many customers to substitute margarin by giving a half pound free with each purchase of the shilling (24 cents) grade. Thus, the margarin cost the buyer at the rate of 16 cents a pound. Enormous quantities of margarin have thus been sold here. It is put up attractively, and, it must be admitted, tastes better than some of the butter retailing at twice the price.

Several other important edibles have recently declined in price in this market. Lard and bacon are 2 to 4 cents cheaper than at the beginning of the year. Eggs, absolutely fresh, are 24 cents and some imported eggs 12 cents a dozen—very low prices for this market. The price of flour having declined, bread has been reduced a cent a loaf for best quality. These reductions have sensibly abated the alarm caused by the general rise in prices last year.

The reductions noted are apparently due to increased supplies. There is a tendency, however, toward lower prices in many other articles on account of the present general trade depression.

BUTTER SUBSTITUTES IN GREATER FAVOR.

Supplementing the recent reports on the late butter famine in Great Britain, Consul J. N. McCunn writes as follows from Glasgow:

It is now believed by many farseeing men interested in the subject that margarine will benefit permanently by the recent butter famine, as the prejudice against any kind of butter substitute, which has so generally existed in the public mind, has now been greatly overcome among a class of people who, until recently, had never tested the merits of margarine as a substitute for butter.

AUSTRALIA.

DECLINE IN BUTTER SHIPMENTS TO THE LONDON MARKET LAST YEAR.

Consul-General John P. Bray makes the report from Melbourne that the butter export trade of the state of Victoria, Australia, for the year 1907, shows a decline of nearly 3,000,000 pounds in oversea shipments as compared with 1906. His statistical details follow:

This decline is due to the unfavorable weather experienced during the latter half of the year. The following is a summary of Victorian butter exports to destinations beyond Australia for each of the past four years:

	1904.	1905.	1906.	1907.
Pounds	34,553,550	30,968,120	37,708,663	34,717,940
Value	$6,389,714	$6,219,640	$7,962,849	$7,519,102

The great market for Victorian butter continues to be London, the total shipments to England comparing as follows:

	1904.	1905.	1906.	1907.
Pounds	29,242,710	26,207,602	33,215,854	30,002,629
Value	$5,342,443	$5,201,684	$6,931,900	$6,437,436

Shipments to other oversea destinations show a slight increase, being 4,715,311 pounds in 1907, against 4,492,909 pounds in 1906.

FRANCE.

MILK AND BUTTER PRODUCTION OF A NEW BREED OF COWS.

Consul Dominic I. Murphy, of Bordeaux, furnishes the following information relative to the dairy productivity of the "Bordelaise," a new breed of cattle developed in the French Department of the Gironde:

The milk of the Bordelaise cows holds middle place in quantity between the Holland and Breton varieties, from which the breed has been developed. While giving somewhat less than the former, the milk is of richer quality, having as great a proportion of butter fat as the Breton, sometimes as high as 41 grams per liter (1.057 quarts), analyses showing the average butter fat in the milk of the Bordelaise to be 36.65 grams per liter, the milk of the Holland cows averaging only 32.66 grams. The average milk production of a Bordelaise cow is from 12 to 15 liters (12.7 to 15.8 quarts) per day.

GERMANY.

GOOD RESULTS OF MILK PASTEURIZING EXPERIMENTS.

Consul Samuel H. Shank, of Mannheim, in a report on the good results attending introduction into Germany by Mr. Nathan Straus, of New York, of the system of pasteurizing milk, says the importance of the work may be realized when it is known that 25 per cent

of the children born in Germany die before they are 1 year old. The consul adds:

The fact that 33 per cent of the cows slaughtered in one German city and 42 per cent of those slaughtered in another had tuberculosis shows the necessity for exercise of great care in the use of cow's milk as food for infants. It is hoped that through demonstrations being made by Mr. Straus, pasteurization of milk may soon become universal.

MEATS AND FISH.

GERMANY.

FRESH-WATER FISH SOLD ONLY WHEN ALIVE—IMPROVED TANK CARS.

Special Agent Capt. Godfrey L. Carden, of the United States Revenue-Cutter Service, sends from Berlin the following information concerning the transportation of live fish in Germany:

Transportation of live fish for market purposes is now an established fact in Germany. Under the Erlwein system which is now being operated on the Prussian State railways the fish are being hauled over considerable distances. I am advised that shipments are being made to Berlin from Lyon in France and from as far south as Roumania. Briefly the new system permits of a proportion of 2 tons of fish to 1 ton of water, and, in instances, as many as 4 tons of fish have been transported alive in 1½ tons of water. This means that the fish have been packed in almost like sardines. Under the Erlwein system oxygen is forced through the fish tank by means of a circulating pump, and the carbonic acid as exhaled in breathing is absorbed by lime plates. Doctor Erlwein, who is responsible for the development of the present system, is one of the principal engineers for the Siemens-Halske electrical establishment of Berlin. The company operating the fish cars is known as the Wilhelm Kaumann nachfolger of Berlin. So far only fresh-water fish are being transported, but I understand that it is the intention to take up the transportation alive of salt-water fish. Before this latter result can be effected it will be necessary to equip many of the seagoing fishery vessels with wells or tanks such as are seen in many of the Boston fishing vessels.

SALE OF LIVE FISH ONLY PERMISSIBLE.

German law does not permit of fresh-water fish being offered for sale except alive. It is common to see in restaurants tanks of fresh-water fish on exhibition in the windows. The law is aimed against the dangers of fish poisoning. It is the opinion here that fresh fish could be transported readily from New York to any one of the large cities in the Mississippi Valley, and, in turn, the fish of the Great Lakes could be transported alive all over the West. I understand that the German company is quite ready to negotiate for American connections to build these fish cars in America.

The sale of fish in Germany is a very important one. It is recognized that the food is not only good and cheap, but offers a ready substitute for meat which, at the high prices now demanded, is placed beyond the reach of many of the poorer people. As originally designed the Erlwein system provided for what is known as a "wet and dry storage." In one instance there was practically no water used. In its present form, however, the tanks only carry enough water to

keep the fish moist. The tanks may be constructed of either wood or metal, and the great value of the method lies in the ability to transport a great number of live fish in a comparatively small space.

FRANCE.

CONSUMPTION OF MEAT AT ROUBAIX—PRICE COMPARISONS.

Consul Chapman Coleman reports that butchers' meats consumed in Roubaix are derived from two sources, for the most part from the local abattoir, the remainder from without the city, chiefly from Lille. The consul's details of the trade follow:

During the past calendar year the Roubaix abattoir furnished 8,592 head of beef cattle, weighing 5,382,045 pounds; 3,924 calves, weighing 561,132 pounds; 8,178 sheep, weighing 395,815 pounds; 10,981 hogs, weighing 1,716,521 pounds, and 1,814 horses, weighing 1,146,995 pounds. The aggregate weight of these meats was 9,202,367 pounds. Adding to the butchers' meats 4,113,599 and 842,565 pounds, respectively, of poultry and game imported into the city, the grand total of meats of all kinds consumed is found to have been 14,138,531 pounds.

The figures for the same articles consumed in the preceding year, 1906, are the following: Butchers' meats from the local abattoir, 8,786,811 pounds; imported butchers' meats, 4,392,383 pounds; imported poultry and game, 836,099 pounds, an aggregate of 14,024,093. A comparison for the year 1907 shows an increase in quantities consumed of all articles except butchers' meats from without, which diminished.

HORSEFLESH POPULARITY—PRICE ADVANCES.

The increase in consumption of meats in 1907, notwithstanding the higher prices, is accounted for by the large increase in the consumption of horseflesh in 1907, although accompanied by some decrease in the use of other butchers' meats.

This large and increasing consumption of horseflesh would appear to be attributable not alone to its comparatively low price, about one-third of that of other butchers' meats, but also and chiefly to the circumstance that repugnance to its use as a food article has been largely overcome and is rapidly disappearing. It is referred to in the local press as the triumph of the horse.

The present retail prices in this city for meats of the various kinds are the following:

Article.	Price per pound.	Article.	Price per pound.
Beef:		Game:	
Steaks	$0.21–$0.25	Domestic rabbits	$0.16
Sirloin	.31	Wild rabbits, each	$0.48–.68
Ribs	.21–.28	Hares, do	1.16–1.54
Mutton:		Pheasants, do	.68–1.16
Leg	.28	Partridges, do	.53–.77
Breast	.17	Wild ducks, do	.68–.96
Cutlets, each	.12–.15	Poultry:	
Veal	.31	Ducks, do	.53–.68
Pork	.25	Chickens, do	.48–.77
Horseflesh	.08–.11	Turkeys, dressed	.39
		Geese, dressed	.39

The following advance of prices in percentages during the past five years, from 1902 to 1907, may be noted: Bread, 15; beef, 22; veal, 14;

mutton, 25; pork, 27; butter, 14; cheese, 25; vegetables, 15 to 30; pastry, 25; oil, 15; coal, 34; charcoal, 24; coffee and chocolate, 25. The greatest increase, 50, is for fish, the smallest, 10, for candles and petroleum.

The prices named may be regarded as applicable, generally, to all cities of this Department of the North and to neighboring regions of France, and embrace a considerable increase in consequence of the octroi duties levied upon admission to the cities on all food and on many other products.

The population of Roubaix, exclusive of the adjoining city of Tourcoing, being 121,115, the yearly consumption of meat per head of the population is found to be about 116 pounds, and the daily about one-third of a pound.

CANADA.

PREPARING AND MARKETING THE NOVA SCOTIAN BONELESS FISH.

Vice-Consul George B. Stephenson, of Yarmouth, furnishes the following information concerning the boneless-fish industry of that district:

While this industry is only a small part of the great fisheries of Nova Scotia, it is of no little importance and interest to the United States, where the greater part of the cured product finds consumption.

The fact that it is possible to work at some stage of the catching or curing the year round is the reason why so many of the ordinary fishermen engage therein. Another advantage they find is the ready returns for their work. A fisherman can get together a small lot of fish put up in this manner, bring it to Yarmouth on Wednesday, ship it to Boston, and have his check for it on Saturday. Not only does this locality prepare fish in this way, but trains and boats from both coasts bring large consignments which are transshipped here each boat day. The ready and quick market in the United States, principally Boston, makes this end of the province produce more than farther north, where transportation facilities are not so good.

The catch, which is all made during the summer months, is rough dressed and put in brine. When the weather becomes such that fishing is no longer possible, the fish are taken out of the brine, thoroughly dressed, cleared of all bones, and put on the drying frames in the sun to dry. If the weather is favorable, it only takes two days to dry the fish; if not, it sometimes takes a week. After drying the fish are returned to the sheds and given a coat of salt. They are then ready to pack. Thirty pounds are generally put in one box.

Two kinds of fish are used, cod and haddock. Formerly everything was sold for cod, though why no one seems to know, as haddock is the better fish of the two.

Few, if any, fail to take out a special invoice for their shipment, these being almost invariably for lots valued at less than $100. The reason they are shipped in such small lots is that the fisherman deals directly with commission merchants in the United States, there being no buyers on this side for this class of fish.

From January 1 to March 1, 1908, there were 157 special invoices certified at this office for 2,337 boxes of boneless cod and haddock. These fish cleared the fishermen $5,614, an average of about 8 cents a pound.

NORWAY.

AMERICAN MEAT DEALERS NOT USING ADVANTAGE AT PORT OF BERGEN.

Consul Felix S. S. Johnson, in the following report from Bergen, draws the attention of American meat exporters to the Norwegian market:

The exporters of the United States are not active in further developing this trade, for prices of all kinds of meats at Bergen have advanced during the past year, owing partly to crop failures, whereas the prices for American hams and bacons have declined. While the customs duty on this article is high the importations are heavy, and the trade is gradually slipping away from the United States and going into those of near-by countries. From the following figures it will be seen that American bacon is from $3.40 to $5.35 per hundredweight lower in price, and hams from $4.25 to $4.86 per hundredweight lower than twelve months ago. This is a difference of between 4½ cents and 6 cents per pound. The quotations are for February 13, 1908, compared with the same date last year:

Variety.	1908.	1907.
American—		
Cumberland	$9.25 to $10.00	$12.90 to $13.40
Bellies	9.75 to 10.70	13.75 to 15.00
Hams	10.10 to 10.95	14.10 to 15.80
Canadian	10.95 to 11.65	13.60 to 14.10
Irish	12.65 to 14.10	14.85 to 15.80
Danish	12.15 to 12.90	14.10 to 14.85

The lard imported at Bergen from the United States is not the best, and it is suggested that the better quality be introduced on this market. [Names of importers of American meats at Bergen are recorded at the Bureau of Manufactures.]

PRESERVING EGGS.

NEW ITALIAN METHOD CHEAP AND EFFECTIVE.

Consul D. I. Murphy, of Bordeaux, forwards the following synopsis from a French journal on a new method of preserving eggs, which, he says, appears to have the double merit of cheapness and simplicity. The article was based upon the experiments of Doctor Campanini, as reported by him in the December bulletin issued by the Italian minister of agriculture.

Doctor Campanini, after reviewing the various known means of preserving eggs—by salt water, lime water, silicate of potash, vaseline, and cold storage—described his experiments, which showed better results than all others.

His theory is that to preserve eggs some system must be adopted that will absolutely prevent the exchange between the air outside and that inside the egg—for it is this continual exchange that causes putrefaction.

Doctor Campanini selected perfectly fresh eggs and covered them with lard, so as to effectually stop up all the pores. The shells were thus rendered impermeable, the exchange of air was prevented and, the obstruction of the pores not permitting the evaporation of the

water, there was no loss of weight. The whites and yellows of the eggs retained their color perfectly and the taste was not modified in the slightest degree. When properly coated with lard—not too thickly—the eggs are put in baskets or boxes upon a bed of tow or fine odorless shavings and so arranged that there will be no point of contact between them—otherwise a mold will develop and putrefaction result. The packing room should be perfectly dry, the question of temperature not being important. By his process Doctor Campanini kept a quantity of eggs for a whole year—through a very hot summer and a very cold winter—and they were perfectly preserved. He says that 4 cents worth of lard suffices to coat 100 eggs, and that anyone could easily prepare that number of eggs in one hour's time.

HANKOW TEA TRADE.

REVIEW OF CHINESE MARKETS FOR THE PAST SEASON.

Vice-Consul-General Willard B. Hull submits the following information and statistics with regard to the Chinese tea business at Hankow during 1907, commonly called the 1907-8 season:

The market opened with brisk buying and high prices. Nearly every chest that was put on the market was immediately taken up, and several buyers remained in Hankow considerably after the market was closed in hope of picking up some odd lots. With the increasing number of large steamers of the ocean-going type, the shippers are able to make better arrangements for freight and secure quicker delivery to the consuming market. The season has on the whole been one of the best for several years, and native dealers have been well satisfied with the higher prices paid them.

The total supply of Hankow teas was 540,278 half chests (a half chest=45 to 48 pounds), against 478,848 half chests in 1906, and 514,325 in 1905. The first crop of Hankow teas was 386,350 half chests, against 372,151 half chests in 1906, and 410,650 half chests in 1905.

The total sales of Hankow teas on this market throughout the season of 1907 was 512,148 half chests, as compared to 467,504 in 1906, and 450,752 in 1905. The total sales of Kiukiang tea during the past season amounted to 186,148 half chests, against 157,961 in 1906 and 177,178 in 1905. Shipments to Russia via Tientsin and northern ports were 7,266,663 pounds, while 11,278,174 pounds were shipped in 1906, and 9,446,866 during 1905. Shipments to Shanghai on native account during the season were 32,384 half chests, against 90,045 in 1906, and 67,073 in 1905. The total Russian business is estimated at 545,000 half chests, against 440,000 in 1906, and 500,000 during 1905.

QUALITY, SUPPLIES, AND EXPORTS.

The quality of the teas was practically the same as the year before, but the finer grades brought higher prices, as was shown by the increase of 10 per cent for best Khemuns during June. Hankow teas, as a rule, sold well during the entire season, the first crop being disposed of quickly. Demand generally fell away toward the end of July and beginning of August, owing chiefly to poor qualities. Common teas brought high prices throughout the season, and the quality was in most cases below that of the 1906 season. Best Ichang teas brought 66 taels per picul, the quality being favorably spoken of.

The supplies of Hankow and Kiukiang teas for the past three seasons, in half chests, have been as follows:

Source of supply.	1905.	1906.	1907.
HANKOW.			
First crop	410,650	372,151	386,350
Second crop	70,625	60,010	109,690
Third crop	33,050	46,687	44,238
	514,325	478,848	540,278
KIUKIANG.			
First crop	167,865	158,855	180,040
Second crop	14,500	7,728	10,362
	182,365	166,583	190,402

The total trade for the last three seasons in half chests has been:

Disposition of crop.	1905.	1906.	1907.
Sales	627,930	544,042	698,296
Shipped on native account	67,073	90,045	32,384
Stocks	1,687	11,344	Nil.
Total	696,690	645,431	730,680

The export figures in pounds have been as follows:

Kind.	1905.	1906.	1907.
Hankow teas	38,716,900	34,506,133	40,452,800
Kiukiang teas	11,682,800	10,996,933	12,625,533

The export of tea in pounds as per customs returns were:

Whence exported.	1905.	1906.	1907.
Great Britain—			
Direct	3,126,228	Nil.	2,132,386
Via Shanghai	2,882,661	4,382,002	5,438,134
Russia in Asia	Nil.	4,219,413	13,084,994
Russia in Europe	27,435,560	16,219,164	13,979,125
Tientsin and northern ports	9,446,866	11,278,174	7,266,663
United States and Canada	4,536,600	4,519,701	6,202,798
Continent of Europe	1,953,360	2,210,000	2,906,050

SOURCES OF SUPPLY.

Particulars of the number of half chests of tea received from each district in the provinces of Hupeh and Hunan for the past three years follow:

Locality.	1905.	1906.	1907.	Locality.	1905.	1906.	1907.
HUPEH PROVINCE.				HUNAN PROVINCE.			
Sung yong	7,385	6,452	8,395	Oonfan, Toyune	186,963	180,005	206,671
Yang lo tung	35,895	32,785	32,081	Seang tan	40,344	39,468	43,191
Tong shan	22,704	20,931	12,462	Chong sow kai	39,406	36,240	46,756
Ko kew	32,040	28,407	34,288	Li ling	12,493	11,810	14,520
Ma kew	1,359	1,256	1,681	Ping kong	11,302	13,823	14,699
Tai sa ping	25,949	23,400	27,196	Nip can sen	31,258	30,568	33,971
I chang	9,755	8,251	10,654	Low yang	22,632	19,491	24,090
				Wun kai, Bek kong	20,894	19,978	21,464
Total	135,087	121,482	126,757	Yong low sen	4,545	3,032	4,017
				Wei san	3,401	2,942	4,142
				Total	379,238	351,357	413,521

Particulars of the quantities of half chests of tea received at Hankow and Kiukiang from the Kiukiang and Wenchow districts follow:

Locality.	1905.	1906.	1907.
Ningchow	108,902	96,422	105,298
Khemun	71,387	68,311	85,104
Kutoan	2,190	1,850	Nil.
Total	182,379	166,583	190,402

The market opened on May 15, 1907, and about 43 chops of Kiukiang tea were shown on the market and several were sold. Hankow teas were shown, but no sales made until May 17. Khemuns were better than the previous year and the market opened strongly, prices being about 7 per cent higher than last season, owing to large purchases by the Russians. Hankow teas, and especially Oonfans, were better than the previous season, prices being about 2 taels (a tael at that time equaling 73 cents American) per half chest higher. During the latter part of May the market for Hankow teas was very strong and prices advanced to 1.50 taels per picul (133⅓ pounds). The price for medium Khemuns rose in some cases to over 15 per cent above the previous year's prices. Ningchows were not strong, the market price being about 30 teals per picul.

SUGAR PRODUCTION.

MEXICO.

PRICE OF LAND AND COST OF PREPARATION FOR CANE CULTIVATION.

In reply to requests for information additional to that contained in his previous report, Special Agent Arthur B. Butman supplies the following supplementary statistics:

Lands in a virgin state, suitable for the growing of sugar cane, and situated in the tropical portions of the country—that is, in the States of Veracruz, Chiapas, and Tabasco—range in price from $1 to $3 gold per acre. In the Tampico section, State of Tamaulipas, one finds such lands higher in price; the influx of Americans thereinto having had the effect of increasing the value of property.

Regarding the cost of clearing, cleaning, and planting lands suitable for cane cultivation, from 55 to 65 pesos ($27.38 to $32.37) per acre is a fair estimate. This includes the clearing and burning of timber and planting of cane, also the cultivation of the cane for the first crop. This cost refers to lands which may be located in the States of Veracruz, Chiapas, Tabasco, and Campeche—that is, the hot lands, where vegetation is exceptionally rank. After the first crop is obtained the expense is, of course, reduced accordingly.

If modern machinery and methods are employed, the plant under the supervision of an experienced and competent manager, and the cane yielding a density of 9 to 10½° Baumé, 1 ton of cane yields 200 to 210 pounds of white sugar.

COST OF PRODUCING SUGAR AND ALCOHOL.

The cost of producing white sugar in Mexico after the land has been prepared, i. e., *planting* cane, cultivation, cutting, conveying to *mill, crushing, and boiling* juice, paying all salaries, taxes, interest

on capital, etc.—in fact, including every expense on the plantation—is from 62 to 90 pesos ($30.88 to $44.82) per ton of sugar, according to the wages for labor, which range from 50 to 75 centavos—say 25 to 38 cents—per day; in some instances perhaps a little less.

The quantity of alcohol obtained from a ton of cane yielding a density of 9 to 10° Baumé depends on the per cent of extraction; cane yielding 70 per cent of juice on weight will yield from 9 to 10 per cent of alcohol. The cost per liter (1.05 quarts) of producing 96 per cent alcohol from sugar-cane juice averages a little over 1 centavo (½ cent) after cane is delivered at the mill; the cost when made as a by-product of sugar is comparative, a large amount being handled as easily as a small quantity, and the only expense being that of the still man, as waste steam is utilized for both pumping and distilling.

Under present conditions it is said that cane can be delivered at the mill for 4 pesos (about $2) per ton; produced under general administration or by contract, 6 pesos (about $3) per ton.

CUBA.

REDUCED ESTIMATES OF YIELD—POOR BUSINESS OUTLOOK.

Consul-General James L. Rodgers, of Habana, states that the estimates on the sugar crop of Cuba have fallen below 1,000,000 tons and only the most optimistic cling to the hope of that amount. Under date of March 13 he reviews the market and its effect on business as follows:

The great majority of planters and others vitally interested assert that 950,000 tons will represent the possible maximum, and 850,000 tons the minimum. There is good reason for believing that 900,000 tons is not too low an estimate, for it is known that cane cutting has practically ceased in many districts, that field hands refuse to work on account of the impossibility of making satisfactory wages, and that some of the mills will stop grinding on April 1 or thereabouts.

Under the most favorable conditions only about six or seven weeks of the grinding season remains, and it is generally stated that by March 16 it will be possible to estimate accurately the total volume of the crop. The latest statement which contains absolute verification of the great deficiency shows a falling off of nearly 40 per cent in the 1908 shipments and stock, as compared with those of 1907 on the similar date (March 1). If the same ratio of loss is maintained the volume of the 1908 crop would be somewhat below 900,000 tons.

The effect of this realization of the size of the sugar crop and the knowledge that there has been little gain in price to the various producers on account of their financial necessities, has already had a serious effect upon business and the revenues of the Government are decreasing in sympathy, while many business men consider the general outlook uncertain and unpromising. The wholesale merchants say they are not importing in the usual volume because they have not the money, and because the country storekeepers are, through caution, refusing to purchase goods. The general opinion is certainly that this will be a bad business year and that 1909 may be worse.

JAPANESE FLOUR MARKET.

DEVELOPMENT OF THE MILLING INDUSTRY—IMPORTS OF CEREALS.

Consul-General Henry B. Miller, of Yokohama, reports in relation to the flour trade in Japan that the tariff law promulgated March 31, 1906, which took effect October 1, 1906, by which the duty on flour was placed at 72½ cents per 133 pounds, has resulted in a very extensive development of flour milling in that country. The same law placed a duty on wheat of 28½ cents per 133 pounds. Mr. Miller, writing under date of January 23, continues:

Foreign flour imported from the United States and Australia into Yokohama and Kobe averaged about 6,500,000 bags per year for the last three years. Since the latter part of last year many flour-milling companies have been established both in the Kwanto and the districts in the neighborhood of Osaka, the daily output being estimated at 10,000 bags. [The names and detailed output of these mills may be obtained from the Bureau of Manufactures.]

The imported American flour which has accumulated in and about Yokohama is estimated at about 400,000 bags at present, and there has been a tendency toward a lowering of prices since last month. As the Japanese companies are said to have an abundant stock of raw material on hand at comparatively low prices, it is expected that there will be keen competition between the imported and home-made flour in the near future, and it is also expected that the price of flour will fall considerably in the course of a couple of months or so.

LARGE PROFITS—PROSPECTS OF THE INDUSTRY.

Reports of the operation of these Japanese mills for the year 1907 have been extremely satisfactory. The dividend declared by one flouring mill company for the first half of the year (1907) was at the rate of 23 per cent per annum, and the dividend declared by a Yokohama concern for the last half of that year was at the rate of 25 per cent per annum.

The establishment of these milling enterprises was looked upon by the American flour exporters with an interest of uncertainty as to their success. They seem, however, to have become firmly established enterprises, with a successful prospect ahead. The motive of the Japanese Government in providing protection sufficient to establish the flour mill business in Japan was evidently for the purpose of making the country entirely independent in the matter of the food supply of flour. They would have a broader field to draw from by establishing the mills in the Kingdom than if they depended alone upon the direct imports of flour. They can now buy their wheat either from Siberia, Manchuria, China, Korea, Australia, India, or the United States, and the industry has also stimulated the production of wheat in Japan. Especially will this be true in the northern part of Japan, in the island of Hokkaido, which is primarily a very good wheat growing country.

It is very difficult, however, to make a prediction as to the future of the flour market in Japan for foreign flour, because of the possibilities of the extensive development of the market. The Japanese

diet is gradually changing more into the character of diversified food; meat, milk and flour are especially entering extensively into use by the masses of the people of Japan, and there is every probability that the consumption of flour will increase at a more rapid ratio in the future than it has in the past.

In 1906 Japan imported wheat to the value of $657,678, and during the eleven months of 1907 ended November 30, to the value of $1,354,653. The importation of both wheat and flour rose from $542,000 in 1896 to $6,981,729 in 1905. In 1906 $4,781,365 worth of wheat and flour was imported and during the eleven months of 1907 ended November 30 there was imported $4,281,067 worth.

SWISS DRINK REGULATIONS.

HOW THE RETAIL LIQUOR TRAFFIC IS CONDUCTED AND RESTRICTED.

Consul R. E. Mansfield, of Lucerne, states that as the general and widespread agitation for greater restriction of the liquor traffic at this time renders the question of the control of that branch of business in other countries of special interest to the people of the United States, he gives the following facts of its conduct in the Swiss Republic:

In Switzerland the laws governing the sale of intoxicants are cantonal, each canton legislating on the subject in a way that is considered best for the locality. The general plan is to limit the number of saloons or bars in proportion to the population. The average is one saloon for about five hundred inhabitants, although in some towns and cities the proportion is one for each two hundred, while in the rural districts the basis is not infrequently as high as one per thousand.

In the canton of Lucerne the rate for license is comparatively high. Saloons are classified, the privilege of operating a bar in a first-class hotel costing much more than for a small restaurant or beer hall. Here the minimum price for license to sell intoxicants at retail is 200 francs, equal to about $40 a year, and the maximum for large first-class hotels 6,000 francs, equivalent to about $1,200 per year.

Each municipality or community decides the number of saloons to be licensed, based upon the number of inhabitants, and when the number prescribed has been reached no influence, political or financial, can secure an additional privilege.

The hour for closing is generally 12 o'clock at night, and as a rule it is strictly observed, any violation of the law resulting in a forfeit of the license. Any special privileges desired by the holder of a liquor license must be applied for to the proper authorities, and, if granted, they must be paid for in addition to the regular annual fee. All license fees in Switzerland must be paid one year in advance, and any neglect on the part of the holder to comply with this requirement results in a forfeit of the privilege.

LIMITED NUMBER OF LICENSES—USE OF REVENUE.

There are no technicalities of the law governing the traffic whereby the holder of a license can avoid a strict compliance with its requirements. The limited number of licenses issued also encourages the strict observance of the law, as a bar privilege is considered valuable

because of the fact that when the maximum number allotted to a community has been issued, it is impossible to secure an additional privilege until one is surrendered or forfeited.

All the revenues received for liquor license are expended upon public schools and the improvement of roads in the canton where the privilege is granted. Three-fourths of the money thus collected is apportioned for educational purposes and the remainder for public highways.

The drinking of alcoholic beverages is general, but not excessive, among Swiss men, though not common among the women. There is little drunkenness in the country, especially in German Switzerland, where the beverages most commonly consumed are beer, light wines, and cider. One rarely sees an intoxicated person on the streets of Lucerne, and never a boisterously drunk one, unless it be in the tourist season, and then the bibulous individual invariably proves to be a foreigner.

The net result of the liquor traffic in Switzerland would seem to be that it is regulated so as to secure a large revenue, which is applied largely to a maintenance of public schools, and at the same time so restricted as to prevent any abuse of the privileges granted with a license to engage in the business.

FRENCH WINE CROP.

OFFICIAL REVIEW OF LAST YEAR'S VINTAGE RESULTS.

Consul-General Robert P. Skinner, of Marseille, advises that the importance of the French wine crop of 1907 has been determined upon a basis which admits of no doubt as to the literal exactitude of the statistics, which he thus reviews:

In former times the importance of the wine crop and the area planted in vines could only be ascertained by estimation, while the figures now available for 1907 rest upon declarations made by landed proprietors in execution of the law of June 29, 1907. Under this legislation (prompted by the increasing difficulties of the wine growers) the area planted in vines, the crop of grapes harvested, and the amount of wine produced are declared and verified according to a painstaking system fully set forth in the law.

The quantities of wine produced in 1907, as thus ascertained, reached the enormous total of 1,745,381,311 gallons. The important material facts regarding the crop for the past two years are as follows, all the figures representing gallons:

	1906.	1907.
France	1,375,774,273	1,745,381,311
Algeria	182,428,420	227,218,623

The crop figures out for last year at 1,056 gallons per hectare (hectare = 2.47 acres) for France, and 1,532 gallons per hectare for Algeria.

The French crop exceeds by 369,607,064 gallons the estimation of the crop published for the year 1906, and exceeds by 456,481,301 gallons the average of the last ten years. However, the French administration observes that estimates for former years are sensibly

lower than the reality, in consequence of the tendency on the part of local reporters to diminish their figures, with the idea of sustaining the market.

AREA AND YIELD BY DISTRICT.

The extent of the French vineyards in 1907 was 4,075,134 acres, or 120,364 acres less than the preceding year. It is recalled, incidentally, that at the end of the eighteenth century the area of the French vineyards was estimated at 3,821,752 acres, and in 1851 the area had reached the figure of 5,386,852 acres. The chief producing departments, as heretofore, are the seven departments in the neighborhood of Marseille, the production of which is stated to have been in gallons as follows:

Department.	1906.	1907.
Aude	113,862,192	221,469,127
Bouches du Rhône	23,620,604	35,658,373
Gard	58,870,102	114,863,134
Hérault	216,619,400	353,862,696
Pyrénées Orientales	47,484,217	119,430,767
Var	35,612,134	46,330,212
Vaucluse	18,237,474	22,894,614

The yield per hectare varied from 1,954 gallons in Hérault and Pyrénées Orientales down to 713 gallons in Vaucluse. These figures are supplied by the Minister of Finance, under date of January 31, 1908. The same report shows that the stock of wine produced prior to 1907, now on hand, is 219,159,706 gallons.

According to alcoholic strength the wine crop of 1907 may be thus divided: Wines of less than 11 degrees, 1,556,642,425 gallons; of 11 degrees, 140,490,460; of more than 11 degrees, 48,248,442.

SALES RESULTS—GENERAL CONDITIONS.

Based upon the prices realized by the growers, the value of the crop of 1907 reached the sum of $215,647,320. In this total the wines which brought more than 50 francs per hectoliter ($9.65 per 26.41 gallons) and classed as "superior wines" stand for $17,939,839, corresponding to a quantity of 29,054,096 gallons, while the very moderate sum of $197,707,480 was realized for the enormous quantity of 1,716,315,618 gallons of light wines.

The French cider crop of 1907 is established at 88,766,885 gallons, against 589,142,270 gallons in 1906. The cider crop is below the average of the last ten years by 342,806,544 gallons.

The French indirect tax department submits the following opinions:

The recent crisis in the wine trade seems not to have been due to a phenomenon of overproduction. The statistics tell us that at the last harvest time the stocks of wine on hand did not exceed 219,159,706 gallons, of which 62,330,723 gallons were in the Gironde (Bordeaux) department. This is a very low figure if the total annual crop be compared thereto, and if one considers that it includes all the high-class wines, which are seldom delivered until they have aged several years in the producers' hands. One may say that there remains no unsold wine, properly speaking, and that France does not produce, in reality, more wine than she can utilize either for domestic consumption or exportation. This demonstration is reassuring for the future; it confirms what was said during the discussion of the law of June 29, 1907—that there is no permanent general overproduction, but that the phenomena of local overproduction may be produced in certain regions, in certain years, phenomena the effects of which may be overcome by a better selling organization.

CIDER INDUSTRY.

FRANCE.

IMPORTED MATERIAL NECESSARY—AMERICAN APPLE PROSPECTS.

Consul A. Gaulin makes the following report from Havre on French cider production and the probable effect of the new French pure-food law on the importation of American apples:

According to recent official estimates, the French cider crop in 1907 amounted to only 72,805,000 gallons, being the lowest figures ever recorded, with the exception of those for the year 1871, when the production fell to 56,215,000 gallons. During the decade from 1897 to 1906 the average annual production was 430,275,000 gallons. The year 1904 established a record with 1,081,831,000 gallons, and the year 1906 was also above the average, with 574,634,000 gallons, while 1903 and 1905 produced only 149,810,000 and 127,541,000 gallons, respectively. It is notable that there never has been in France more than two large cider crops in any given period of five years.

The average annual cider consumption in France being between 344,000,000 and 370,000,000 gallons, this season's production is manifestly inadequate, although fairly large stocks were left over from the previous season.

There appears to be a considerable increase in the importations of Spanish apples, and there would probably be an unusually brisk demand for American apples were it not for a strict interpretation of the French pure-food law, to the effect that no product may be sold as "cider" which is not prepared exclusively from the juice of green, or fresh, apples. Chopped apples can not, accordingly, be used in any manner for mixing purposes, but it is allowable still to use them in the making of a weaker kind of cider commonly designated as "boisson Normande," or simply "boisson," of which there is a large consumption among the laboring classes in Normandy. It is, therefore, most likely that there will always be a good demand for these goods, but it is possible that a rigid enforcement of the law in question along the lines stated may prove an obstacle to what has been until now an important and constantly growing trade.

MEXICO.

OPPORTUNITY IN MEXICO FOR SALE OF AMERICAN BOTTLED CIDER.

Consul A. J. Lespinasse, writing from Tuxpam, says that there exists an excellent demand throughout Mexico for sparkling bottled cider, to which he adds:

In this and surrounding territory, however, American bottled cider is rarely seen, and the idea prevails that it is of inferior quality and prepared by artificial means, which renders it detrimental to health. Spanish cider is exclusively imported and can be obtained in all grocery stores, restaurants, and hotels. If properly introduced, the many excellent qualities of American cider would be quickly appreciated and secure a permanent foothold in this market, which would annually consume large quantities.

The duty on bottled cider is 25 cents, Mexican, per net kilo (2¼ pounds). *California wine* manufacturers would find Mexico a profit-

able field for the sale of their products, and should endeavor to enter this trade. The pure, wholesome wines and brandies of the State of California would undoubtedly be very welcome. The duty on bottled white and red wines is 25 centimes (centime=⅕ cent American) per net kilo; in wood, 13 centimes per kilo gross. The duty on brandy in wood is 55 centimes per liter (liter, 1.05 quarts); in glass, 75 centimes per liter.

BRAZILIAN COFFEE.

SAO PAULO ORGANIZES A COMMISSION TO EXTEND SALES.

The president of the State of Sao Paulo, Brazil, has issued a decree organizing the "Coffee propaganda service," a copy of which is furnished the Department of State by Ambassador Dudley, dated Petropolis, February 24. Under the decree a board is created and attached to the Department of Agriculture, Commerce, and Public Works. This board is styled "The Administrative Board of the Coffee Propaganda Department." Following are the principal functions assigned this board:

To study the conditions of the consuming markets and to lay before the secretary of agriculture such proposals as they may consider advisable for the stimulation of consumption, either by developing existing markets or conquering new ones, and for defense against fraud and imitations.

To be constantly studying every possible measure for the propaganda of coffee and to devise means whereby the advantages of using coffee may become more widely known, and to point out to the consumer the drawbacks to himself of using substitutes and imitations.

To direct and superintend the service of propaganda for increasing the consumption of coffee and to see that the companies who have contracted for this service with the State carry out their obligations in a satisfactory manner.

To issue instructions to aid those fiscals in the performance of their duties who have been appointed to such companies as have contracted for the propaganda of coffee.

To organize traveling propaganda exhibitions to visit the principal markets under the direction of a member of the board to show the various products of the State and to exhibit on the cinematograph views illustrative of our development and civilization, our agriculture, and our industries.

The board will consist of four members appointed by the president of the State, acting on the advice of the secretary of agriculture.

The president and secretary of the board after appointment shall remain in this capital to attend to the special duties of the board.

The two other members of the board shall take it in turns to travel abroad so that they may always be in touch with the propaganda campaign.

Grants in aid of coffee propaganda shall be made to private individuals or companies who conform to the regulations of this decree.

Grants shall be made for a maximum period of five (5) years in cash or kind—coffee—the price of the latter to be fixed by Government.

Grants of cash shall not exceed 20 per cent of the capital of the contracting company, nor shall grants of coffee (of a value not exceeding the said percentage) be made until after the money grant has been used up.

Grants shall be made by preference to companies of a national character or whose object is the development of national products.

The trade-mark of the contracting parties shall be authenticated by Government and it shall not be changed while the contract is in force.

Only coffee from the State of Sao Paulo shall be dealt in.

The types of coffee to be used—raw, roasted, in bean, or ground—to which the official mark of the State shall be affixed shall be subject to the approval of the administrative board.

The use of the official mark is guaranteed to the contracting party exclusively in his own sphere of operations for the whole term of the contract and shall belong to him after the grant which has been made to him has been discontinued.

AGRICULTURE.

CROPS AND FARM EQUIPMENT.

ITALY.

FOODSTUFF NEEDS AND LABOR SCARCITY CREATE MACHINERY MARKETS.

Consul James E. Dunning, of Milan, in the following report on American agricultural machinery in Italy, explains the special opportunity that is developing for their greater sale there:

During 1907 the United States was the largest seller of agricultural machinery in Italy, whose wants in this regard are increasing every year. During 1907 up to October 1 imports into Italy from all sources, and taking account of all classes of machinery in this line, amounted to 7,365 tons, of which the United States furnished 2,535, Germany 2,534, France 504, Great Britain 1,299, and Austria 493.

This class of imports has increased in value from about $400,000 in 1892, to about $3,200,000, which was the total value of the tonnage in 1907, or about $3,000,000 for the nine months stated above. The effect and position of German competition in this important field is evident. Italy is only a beginner in this manufacturing trade as yet, and there is an unusual opportunity for the active American exporter.

During 1907 German sales were largely in plows, harrows, seeders, mowing machines, thrashing machines, root cutters, pumps, boilers, and manure spreaders; while the American goods showing the greatest favor were horse hoes, plows, seeders, harrows, and rollers. The French made some notable sales of machines for special use in beet culture. One of the strong English lines was a corn husker and beater. Austria-Hungary sold Italy most of the scythes, rakes, forks, and other hand implements bought in 1907, this class of goods making up about five-eighths of the total imports from that source. The single province of Mantua, one of the most prosperous of the 9 subdivisions of the Milan consular district, bought foreign agricultural machinery in 1907 to the value of about $750,000.

LAND AREA AND INCREASED PRODUCTION.

Italy's total land area, in acres of 43,560 square feet each, is divided as follows:

Character:	
Barren, or nonproducing	10,077,425
Mountain pastures	1,928,167
Forests and wood lands	10,231,822
Arable land	48,168,773
Total	70,406,187

These estimates are made by the consulate on the basis of the latest and apparently most authoritative returns from official and other sources.

In the last twenty years there has been a gradual increase in the arable land in Italy, through reclamation and clearing, and a much more marked advance in the quantity of product from the land itself.

The Italian wheat crop averaged, for the years 1890–1894, 151,600,000 bushels, and for 1904–1907 it averaged 200,000,000 bushels. Between 1894 and 1904 the crop per acre of wheat in Italy rose from 11.59 United States bushels to 15.41 bushels. The Italian corn crop increased from 89,677,200 bushels in 1890–1894 (average per year) to 93,103,008 bushels in 1906. The crop of rice has risen in its yearly averages since 1890 by about 33⅓ per cent. Even with this heavy production, Italy remains an active importer of foreign cereals, 32,509,013 bushels of which were imported from various sources during the first nine months of 1907. The value of such imports into Italy for that period was $40,323,000, and though Italy is a heavy exporter of cereals, evidence that she does not yet begin to supply herself is clear in the comparison of imports with exports, which latter for the nine months of 1907 ending with September amounted in value to $34,426,000.

It is true, however, that Italian exports of cereals are gradually increasing, while imports are decreasing, in proportion to the ability of the country to produce heavier crops. Thus, cereal exports for the first three quarters of 1907 were in value about $6,500,000 greater than for the corresponding period in 1906; while imports for the same time were about $8,000,000 less. The latent ability of the country in this field is therefore apparent, and its development certainly depends very much upon the extended use of agricultural machinery in place of the old methods of hand labor.

THE PASSING OF HAND LABOR.

The passing of hand labor in Italian agriculture and its effect on the producing power of the country are shown in a review of any one of the great crops of the Kingdom by provinces. Taking the corn crop for 1906, which is the latest full return at the disposal of the consulate, the following result is shown:

Province.	Acreage.	Crop, in bushels.	Province.	Acreage.	Crop, in bushels.
Milan	673,780	20,620,070	Rome	182,097	3,454,669
Turin	374,475	9,257,909	Adriatic provinces	454,025	5,685,941
Venice	705,862	17,861,911	Mediterranean provinces	878,417	8,373,638
Genoa	38,047	1,393,309	Sicily	9,740	211,131
Emilia	431,460	9,957,761	Sardinia	17,365	113,131
Umbria	472,812	11,410,574			
Florence	305,517	4,762,964	Total	4,543,597	93,103,008

This table shows how Milan, where industrial development has rapidly reduced the supply of hand labor available for agriculture and created the need for large stocks of agricultural machinery, has become much more productive than Venice, which has a greater acreage, but which has not yet been forced to find a substitute for hand labor to the extent demanded by Milan. One of the principal causes at Milan for the shortage of hand labor in agriculture is the intensification of all lines of factory labor. This tendency has, in a measure more or less equal to that observed at Milan, made itself felt throughout Italy. At the north it has been strong and influential; toward the south it has gradually diminished as the population becomes less and less absorbed in high-class factory work. But the influence of this industrial development has affected the agricultural interests directly, with the result that, considering its outlook for the future, *it must greatly improve* the field as a selling market for American

exporters of machinery. Further light is thrown on the passing of hand labor in Italian agriculture when it is observed that whereas farm hands in the Milan consular district are paid an average wage of 25 cents (American) per day for men and 15 cents per day for women and children, industrial workers in Milan and the other cities of the district earn from 57 cents to $1.16 per day, with a daily average for 14 selected typical classes of trades of 76½ cents.

Hence, hand labor on Italian farms is gradually reducing itself by the natural means incident to the changing economic life of the country, and machinery is coming into the field to take its place. Add to this the fact that, on account of the high and rapidly increasing cost of other foods in Italy, cereals are in a constantly growing demand among all classes, and the other fact that the country can not supply itself as yet, and the opportunity for a large increase in sales of farm machinery seems apparent.

METHODS TO GET TRADE.

No line of American goods is handled with more difficulty in Italy than agricultural machinery and tools. Not only is competition exceedingly sharp from the direction of continental rivals in the territory, but the methods long in use here to get a hold with new goods are, as a rule, bewildering to the exporter not experienced in the campaign. The foundation of success must be personal effort, either on the part of well-trained men sent out from home by the manufacturer himself, or by carefully chosen agents on the ground to whom has been intrusted the work of introduction and extension. Catalogue methods are of no avail in this field, but, on the contrary, are of the greatest use to our competitors.

Very much should be left to the representative sent into Italy on this line, and he should be given rather liberal leeway in such methods of exploitation as he may adopt. The consulate has an impression, based on close observation of the case, that some American exporters have given too little care to the choice of their representatives, and too little thought to planning with them the work to be undertaken. The consulate believes that no such attempt should be made until the agent and his principal have gone over the whole situation with extreme care, and given it the closest study as to methods to be used, terms, deliveries, commissions, and everything else which will increase the sense of harmony and confidence between the two.

SPECIAL PROCEDURE ADVISABLE.

This is a special chance, such as the consulate has before referred to, for the establishment at Milan of a general agency to handle goods of this class, placing all the local details in the hands of the persons in charge of it. There is, unfortunately, no such agency here as yet, though there are several which could probably take up American goods of this character if arrangements were made with them to do so. The consulate would advise all interested exporters to make their preliminary plans with unusual care. If the agent is to be chosen here instead of sent out from the United States (and he should not be sent out unless he speaks the Italian language well), all the more care must be used.

This is also one of the cases in which the consulate can not submit *to exporters a list of* desirable agents suited to engage in all

branches of this business. The best method is to make an inquiry at the consulate by letter, and to give the consulate an opportunity to place the exporter directly in touch with prospective agents for further dealings should they prove to be called for. To make a wholesale and broadcast announcement that an American firm is seeking an entrance into the field and agents to effect that purpose, is deemed unwise. Any American exporter who will supply the consulate with his catalogue, therefore, and a clear statement of the business he wants to undertake, will be placed in communication with agents or firms of agents on the consulate's list who will be given an opportunity to look over the proposition before going into it with correspondence.

Such American firms should indicate in their inquiry letters their ideas as to terms of payment, their methods of shipment, and should state the language in which they prefer to conduct their correspondence with such agents as may be referred to them.

VARIOUS QUESTIONS INVOLVED.

Personal visits to Italy by responsible members of exporting houses in America are always advisable before the beginning of a campaign of this kind. While such of the more important agents as the consulate would naturally suggest would be able to pay cash or its equivalent for their orders, there is some doubt as to whether they would care to do so, particularly in the face of their ability to buy German or Austrian goods on terms of their own making. This question of terms between Italy and America can not be well settled until more of our exporters can come into personal contact with the importers on this side, or until there can be established in Milan, for the whole of Italy, a depot of American goods from which purchases can be made directly. Italy still remains so small a customer in comparison with the vastly greater sales which can be made in Germany, for instance, that up to now the American manufacturer has not been able to deal directly with buyers here with that degree of satisfaction found in some other parts of the Continent where orders are heavier. This has built up the system under which Italian buyers take their goods from German or Austrian or French agents of American houses, making such terms as the agent will themselves agree to and having no connection whatever with the home house.

This method is not advantageous to the future of our goods in Italy, which is advancing so rapidly as to demand direct and careful attention. This attention, in so far as it relates to methods by which the Italian buyer can take his deliveries direct from the American manufacturer, is inevitably involved with the question of terms, and the only solution appears to be the establishment of some general agency in Italy for the exposition of American goods.

FUTURE OF AMERICAN MACHINERY IN ITALY.

At all events, the future of American agricultural machinery in Italy depends largely upon the success with which exporters get into direct contact with the field. The superiority of our stock is not denied, but in spite of its quality it comes into competition with foreign articles which have the advantage of being in the hands of highly trained agents, who make the most of the personal element and even of social influence in getting control of the territory. Very *much of a successful* campaign of attack upon this trade in Italy

should be devoted to giving the agent a personal influence in quarters having the introduction of his goods under control to a greater or less extent. He should be allowed a great deal of freedom, after careful planning with his house, in operating among agricultural schools, farmers' societies, boards of trade, and similar institutions. That must be regarded as an integral part of his effort to sell American goods of this character.

The consulate would be glad to take up the subject of this report further by correspondence with any manufacturers interested in it who will send to this office an explicit statement of their wants and their inquiries or criticisms. It is peculiarly a situation in which the case of each inquirer can best be discussed by itself.

BOLIVIA.

OPPORTUNITY FOR THE SALE OF FARM IMPLEMENTS—EXPERTS REQUIRED.

Special Agent Charles M. Pepper, writing from La Paz, tells of the development of agriculture in Bolivia and the opening for the sale, to a limited extent at present, of agricultural implements, and the necessity of instructing the natives in their use. Mr. Pepper says:

There is a prospective market for agricultural machinery in Bolivia, though not a big one. It is proposed to introduce some classes of American farm tools on the altiplanicie or central plain where more than half the population, about 1,000,000 of the inhabitants, subsist. The average height of this plain is 12,000 feet, though there are higher elevations which are populated. The plans of the Bolivian Government for the encouragement of agriculture, which are gradually being put into practice, include the central plateau, and improved farming in this extensive region means modern implements. I therefore give some indication of its characteristics and the conditions under which the cultivation of its few crops are carried on.

LIMITED CROPS OWING TO ELEVATION.

Notwithstanding that the region lies within the Tropics the altitude takes it out of the zone of tropical agriculture, while the products of the temperate zone which can be grown are also limited. In the valleys, which drop below 9,000 feet, some corn, wheat, alfalfa, and oats and vegetables and fruits are cultivated, but on the plateau these crops are not a success. The staple products are potatoes, barley, and quinua. The latter is the nearest approach to wheat that is obtained. It grows about 3 feet high and bears a small but fairly abundant grain something like rice in appearance. Quinua has considerable starchy matter, and, in addition to its use for solid food, is the grain from which the chicha or native alcoholic drink is distilled.

The Government is now arranging for the introduction of seeds of various kinds, and among the cereals it is suggested that, while no prospect exists of cultivating Kansas, Turkey Red, or other staple wheats of the United States, some variety of Siberian wheat may be found that will be suitable for the Bolivian plateau, which has no such extremes of heat *and cold as* either Siberia or Kansas. In furthering *its plans for developing* new crops the Government is likely to seek

the services of an expert from the United States Department of Agriculture, and such an expert should also be useful in showing the lines to be followed in introducing modern farm implements.

NO ARTIFICIAL FERTILIZERS—TRANSPORTATION TOO COSTLY.

The surface of the central plateau is rolling and broken in some places, while in others there are long level stretches or pampas, while in all parts it is stony. Notwithstanding that guano is plentiful and cheap on the Pacific coast, the high cost of transportation of bulky products renders its use for Bolivia impracticable, and there are in fact no artificial fertilizers. Crops are rotated and then the land is rested for a period varying from three to six years. After the period of rest, usually potatoes are the first crop planted, and they yield abundantly. The next year barley for the grain follows, and in the third year barley is again planted, but the grain from this planting is small, and the chief value of the crop is in the straw. Quinua generally is the last crop of the rotating series.

Even without manuring, better harvests could be obtained by deep plowing and probably a shorter period of resting the soil be allowed. The Bolivian farm laborer turns up about 4 inches of soil with his wooden-beam plow, or pronged stick. However, the ground is plowed twice before it is planted. The rainy reason on the plateau generally lasts from November through February. In March, when the earth is soft, the land that has been resting is plowed and left till September, when it is plowed again and sown in time to give the growing crops the benefits of the rains.

FEW IMPROVED FARM TOOLS IN USE.

Up to the present time a very few improved farm tools have found their way into Bolivia to replace the crude implements that have been in use for generations, but there have been enough to show their possibilities. The Bolivian Railway Company, in order to develop local traffic for its lines, is seeking to improve the agricultural methods that are followed, and is cooperating with the Government in the latter's measures.

The Government has lately purchased some agricultural machinery, including ordinary plows, the latter having been bought in Europe. President Montes has imported an American disk plow for use on his own estate and others have been ordered for the Government. There appears to be an opening both for the disks and for the ordinary plows, the latter being likely to command the larger sale. The stony nature of the soil and its dryness at the September plowing might appear to militate against the disk, but for the March plowing, when the soil is moist, it would seem to serve the purpose. Many of the farms on the central plateau are miles in extent, so that the disks are not open to the objection of lack of space in which to utilize them to advantage. The single disk, adapted to three animals, would appear to have the best chance in the initial experiments, since three animals can be driven in the field abreast, while to handle a double disk with four animals would be more than twice as difficult. However, both kinds are likely to be tested.

LARGE AND SMALL FARMS—OXEN USED—NO HORSES.

Though there are many great estates on the table-land, there are *also a very large* number of chacras or small farms cultivated by the

Indians under leases and customs which give them substantially the rights of ownership. It is this class that must be looked to if a market for ordinary plows is to be developed, though the example will have to be set by the large landowners. Bullocks or oxen are universally employed, but while farm horses are out of the question mules can be obtained. They are brought in from Argentina every year in large numbers for the pack trains, and as the railway lines will lessen the number required for transportation they may be utilized for agricultural purposes.

The idea of the Government in importing improved farm implements is to employ them at the Agricultural School in order to illustrate their economic advantages and to secure their introduction among the big and little farmers. Not much, however, has yet been done in the way of demonstration. I am not informed whether the agents of the manufacturers who have secured the initial orders from the Government and from private parties have been at pains to provide means of practical demonstration, but unless this is done the results will be disappointing. The Bolivian farm laborer will not take to a modern plow by instinct. He must see it working and be taught how to handle it.

In addition to ordinary and disk plows there should be a market on the central plateau for harrows, cultivators, and potato planters. Potatoes are an important crop and the area given up to them each season is considerable. A New England firm's hoes and other simple tools are already in use, though not extensively.

NO DUTY ON IMPLEMENTS—A PERMANENT EXHIBIT ADVANTAGEOUS.

It is not practicable to give an idea of the relations of the retail price of agricultural implements in Bolivia to the factory price in the United States because so few sales have been made. Agricultural machinery is admitted free of duty, but the freight charges from the seaports are heavy. Nothing in the way of a wareroom for exhibiting agricultural machinery exists, and samples or exhibits by dealers are not to be found except on the most limited scale. Señor Ballivian, the Minister of Agriculture, suggests that a permanent exhibit of American farm tools would in the long run prove a paying investment, since it would serve as a means of ordering by catalogue and would obviate the necessity of dealers keeping large stocks on hand. Its chief value would be as an object lesson, the exhibit being utilized from time to time in giving demonstrations. The Government would cooperate with American manufacturers in establishing and maintaining a permanent exposition of this kind.

IRRIGATION NEEDED—WELL-DRILLING MACHINES ORDERED.

While at some seasons the central plateau has an abundance of water, the distribution of the rainfall is not equable enough to dispense with artificial means. A few windmills are found, and at all seasons the winds sweep across the pampa with ample force. An improved Chicago aeromotor near Lake Titicaca is reported to give very satisfactory results. Two aeromotors have been imported from France by the Government, and one of them has been erected near Sicasica, which is on the dividing ridge of the plateau. Nine well-drilling machines have been imported from Pennsylvania for the Government account, and two of these will be set up on the table-land, *one having been loaned to* the railway company for use in the station

grounds at Oruro. In purchasing these drills the precaution has been taken to insure the practical demonstration of their utility by bringing out an expert from the United States to operate them. The Bolivian Congress made appropriations for several more well-drilling machines which will be imported during the present year.

HOW MANUFACTURERS MAY GET A START IN BOLIVIA.

I append a list of addresses to which manufacturers may find it worth while to send illustrated circulars and catalogues of the simpler farm implements. There is no prospective demand for steam plows, steam thrashing machines, and the like. In forwarding the list I desire to state that it is meant to serve as the basis for an educational campaign and not as promising immediate sales. The juntas, or agricultural societies, in the different sections are under the patronage of the Government, but they are also a good medium for reaching private purchasers. All printed matter should be in Spanish, for otherwise it is a waste of postage.

American manufacturers who are so well established in the Argentine Republic have an easy means of testing the possibilities of creating a market in southern Bolivia. The railway now runs to Quiaca, on the border, and from this point both Tupiza and Tarija, the centers of population and of distribution of merchandise for southern Bolivia, can be reached by a day and a half or two days' mule riding. Tarija is the more important as the center of a farming district, and the Government School of Agriculture is located there. The Buenos Aires agents of the American firms can easily get in touch with this territory.

In outlining the market possibilities of the central table-land and the semitropical valleys I would not be understood as limiting them to these districts. The real agricultural zone of Bolivia is the vast region known as the Chaco, which spreads from the Atlantic slope of the Andes to the Paraguay River. But this region is now populated only by Indian tribes, and by wild cattle. Railways, colonization, and irrigation are measures of the future to secure its development, and while all of them are in project they have not advanced far enough to call for a description of the Chaco as a market for agricultural implements.

[The names of persons and firms to whom catalogues and other information may be sent are on file at the Bureau of Manufactures.]

SANTO DOMINGO.

COMMERCIAL AND ECONOMIC RELATION OF THE TOBACCO CROP.

Vice-Consul A. W. Lithgow, of Puerto Plata, regards tobacco as the most important crop in the island of Santo Domingo, by reason of benefiting the largest number of people. He describes the present status of the industry:

The tobacco crop of the Dominican Republic the past year was the largest known, but has been a disappointment owing to the long-continued drought, the young plants not receiving rain when most needed. A sufficient area was planted to have produced 300,000 bales, or 36,000,000 pounds (a bale contains 120 pounds), but the crop has not exceeded 220,000 bales, or 26,400,000 pounds. The quality has *also been poor.*

Virtually all the tobacco of this country goes to Germany, whence a great quantity is sold to Russia, Austria, and England, where it is used in the manufacture of inferior cigars and pipe tobacco.

In this connection an error occurs in the statistics of "Foreign Commerce of the Republic in 1905," published in the Bulletin of the Bureau of American Republics in May, 1906. That report states that 11,510,712 pounds of leaf tobacco, valued at $840,487, were exported, of which Germany took 5,890,665 pounds, the United States 3,719,458 pounds, and France 1,900,639 pounds. However, only 41,870 pounds were actually for the United States. This error arose from the fact that the Clyde Line steamers carry tobacco to New York in transit, from where it is transshipped to Germany. Another statistician, in writing on the foreign trade of the Republic for the first six months of 1906, says:

> The shipments of tobacco to Germany dropped from 3,362,684 pounds to 744,180 pounds, while the United States increased its purchases 600,000, having been less than 60,000 pounds during the first half of 1905. The remainder, 349,174 pounds, went principally to France.

I find that only 1,866 pounds were actually shipped for the United States during the entire year 1906. Neither does France take any of this tobacco. The amounts credited to her are simply shipments made by the French line of steamers and transshipped to Germany from Havre.

PRICES RECEIVED—SMALL NET RETURNS.

Hamburg started paying 35 marks (mark=23.8 cents) per 50 kilos (kilo=2⅕ pounds) in 1907, but soon the price dropped to 26 marks owing to its poor quality. This would make the average price in Germany 30 marks, or $7.14, per 50 kilos. At these figures the value of the crop placed in Hamburg would be $1,713,000.

It is interesting to dissect the foregoing figures and find the relatively small amount the farmer receives from the crop that holds third place in value in this Republic. The average price paid the farmer for the three standard qualities was $4 per 50 kilos. As the price dropped in Germany this was reduced to $3. This makes the average price received by the farmer for the crop $3.50 per kilos.

The expense to the merchant in preparing for shipment—i. e., separating, baling, etc., railroad freight to seaboard—is $2.35, so the value of the crop at shipping point is $5.85 per 50 kilos—110 pounds. The expenses for shipping, freight, commissions, and expenses in Germany are $1.75 per 50 kilos. In résumé, for a crop of 220,000 bales, or 26,400,000 pounds, the $1,713,000 valuation must be divided as follows:

Farmer receives	$840,000
Laborers and railroad	564,000
Expenses to and in Germany	420,000
	1,824,000
Value of the crop in Germany	1,713,000
Loss to merchants	111,000

The exporter actually loses about 4 cents on every 110 pounds of tobacco he ships. In considering the foregoing figures it is seen that the economists of the Republic have a serious problem before them. If the above were *an unusual* occurrence it could be put down as an

unfortunate year, but to my knowledge the years that the exporter makes money on his tobacco are few and far apart.

The Government in its efforts to better this condition last year brought two Cubans to show the people how to grow and cure their tobacco, but for some reason there were little or no results.

COMPARISON WITH OTHER CROPS.

Tobacco holds third place in importance among the products of the country when it could and should be the leader. It is the crop that gives more general benefit to the country, as it distributes the public wealth more extensively. Sugar holds first place, and still the people in the southern part of the island, which confines itself to cane growing, are much poorer than those on the northern side, where cacao, coffee, and tobacco are planted. In the south the sugar estates have taken up a vast extent of lands, which have been bought from the small landholders. These last in becoming peons have lost their independence and their earnings are reduced to 50 or 60 cents a day during the sugar season. In the northern part it is different, as the land has remained more generally divided.

Cacao is the second crop in importance. Undoubtedly it is by far the most profitable of all for the planter, but only those that are better off can devote themselves to this crop, as it takes five years to produce. It requires comparatively little labor, so most of the proceeds go into the planter's pocket and result in little benefit to the general public.

These cacao planters live very simply, with few even of the ordinary comforts of life. They raise enough small fruits, hogs, or cattle to pay their living expenses, and as a rule the whole of the proceeds of the cacao is buried or taken out of circulation. If there were banks or other institutions where these people could be induced to deposit their money, then it could be used for enterprises, and the public benefited; but such is not the case. There is enough gold buried in this country to pay its public debt, yet any enterprise of importance that is started must depend on foreign capital.

CROP POSSIBILITIES—EFFECT ON TRADE.

With tobacco it is different, as it takes only seven months from the planting of the seed to market the product, making it the poor man's best crop. It is entirely grown by small farmers, and requires many workers to handle it, but at 3 cents a pound—and the farmer has not received more on an average for many years—there is no money in this crop. The trouble is that the tobacco is grown in a routine manner, and no modern methods are applied. It is cured in a careless way, most of the time being shipped before it has passed through its complete fermentation. Naturally, when it arrives in Europe a large percentage is entirely rotten.

Santo Domingo might not be able to grow any tobacco equal to the "Vuelta abajo" tobacco of Cuba, but it can raise a superior quality to that of Porto Rico and Jamaica. An ideal crop for this country would be a tobacco that would yield 10 cents a pound to the farmer. Then instead of $840,000 for the crop as stated, they would receive $2,640,000. This money would be spent by the farmers, for they would like to live better. If this should happen, the imports from the United States to this country would increase 200 per cent.

FRANCE.

ALFALFA SEED GROWING—PRICES REALIZED AND EXPORTATIONS.

The following information in regard to the growing of alfalfa seed in France has been obtained by Consul-General Robert P. Skinner, of Marseille, from official agricultural sources:

Alfalfa, commonly called luzerne in France, is grown very generally in this country. Seed for sowing is commonly obtained in the south of France. The type known commercially as luzerne of Provence is obtained in the Departments of the Bouches du Rhône, Gard, Vaucluse, Drôme, and Ardèche; the luzernes of Poitou are obtained in the Departments of Gers, Aude, Tarn, Sarthe Vienne, Deux Sèvres, and more or less throughout the old province of Anjou; also in a few departments in the north of France. It is unquestionably true, however, that the seed from Provence is superior to all other, yielding more generously and manifesting more resistance to all unfavorable conditions.

The same fields are utilized for growing the hay and the seed itself. In general, three crops of hay are cut from the same field, and sometimes in Provence a fourth crop, called the " regain," is gathered. As a rule the second crop is allowed to mature, although it sometimes happens that the third crop also is permitted to produce seed in warm regions, when the temperature is particularly favorable; that is to say, not too damp.

SOWING AND HARVESTING.

The seed is sown broadcast, and the growing crop requires no particular attention, whether it be intended to cut the grass before or after maturity. Alfalfa is never planted in rows for seed-growing purposes.

The value of lands suitable for alfalfa growing ranges from 2,000 to 3,000 francs per hectare ($156 to $234 per acre) in this part of France.

The crop is cut either by hand or with an ordinary mower, and the seed is thrashed out by means of special instruments resembling the wheat-thrashing machine. The cheapest type of " decuscuteur," or classing and purifying machines, is offered for sale at $17.37. It is claimed for it that it will eliminate stones, dust, all the cuscute, and nearly all the plantain seed, at the same time dividing the grain into two classes, one containing only fine large grains and the other all the small grain. More elaborate devices are offered for sale at from $34.75 to $96.50.

The wages paid to farm laborers where alfalfa is grown are usually 3 francs (58 cents) per day. The seed is thrashed by contract, the price varying between 8 and 10 francs per 100 kilos ($1.54 to $1.93 per 220 pounds) of seed yield.

YIELD OF SEED.

A wide difference of opinion prevails in regard to the average yield of seed per hectare (2.47 acres). One practical seed man places it at 500 kilos (1,102.3 pounds), while another states that the average is as much as 1,000 kilos (2,204.6 pounds). It is probably somewhere between these two figures. No special difficulties present themselves in this culture which are not met with in farming operations generally.

The most persistent enemy of the alfalfa farmer is the "cuscute" (genus cuscuta), commonly called in English "dodder of thyme." This parasite weed stifles the plant and causes its death. As a rule the cuscute and other weeds disappear annually after the first cutting, leaving the second, from which the seed is gathered, comparatively free from objectionable matter. Finally, when the cuscute does mature with the alfalfa, it is eliminated in the "decuscuteur" referred to. In certain regions prior to the second cutting a caterpillar, denominated the "negril," sometimes makes its appearance and devours the flowers before the seed has formed. Until now no efficacious means of fighting this pest has been found.

Damp localities are unfavorable to the production of alfalfa seed; when the plant bursts into flower, new shoots sprout at the base of the plant, and the flower itself dries without maturing.

PRICES AND EXPORTATIONS TO THE UNITED STATES.

The crop of seed is gathered in August, September, and early in October, according to the region, though as a rule in September. After the field is cut the crop is dried, and then follows the thrashing and cleaning operations, which continue two or three months. The price received by the seed grower varies naturally with the year and the crop. In 1907 dealers paid 150 francs per 100 kilos ($28.95 per 220 pounds) to farmers, this particularly high price being due to the destruction of a large part of the seed crop by inundations. One informant states that three-fourths of the Provencal crop of 1907 was thus destroyed. In ordinary years when the crop is abundant farmers receive 110 to 115 francs per 100 kilos ($21.23 to $22.20 per 220 pounds). Exportations of the crop of 1907 have been sold to American buyers who bought early at $26.62 to $30.36 per 220 pounds.

The declared value of exportations of alfalfa seed to the United States from the Marseille consular district in 1907 was $19,866, against $2,663 in 1906, and $19,028 in 1905.

COCHIN CHINA.

EQUIPMENTS DESIRED FOR THE CULTURE OF RICE.

Consul Jacob E. Conner, writing from Saigon, sends the following information on the prospects for the sale of American agricultural machinery in French Cochin China:

There is a good business opportunity in Cochin China for manufacturers of rice-farming machinery. The implements chiefly needed are plows, harrows, disk cultivators, thrashing machines, fanning machines, and traction engines. The natives are backward about the use of such machinery, but they have the capacity to grasp their importance, and have mechanical ingenuity enough to manage them.

The colonial department of agriculture is ready to assist in the introduction of such machinery and has asked the American consul for catalogues. Such catalogues should, if possible, be printed in French; but, at any rate, must be attractively illustrated. Colored illustrations to be hung on the walls are effective.

The reasons why this is a promising field are evident from the following statements:

Plowing is done in many cases by means of crooked sticks; in others by plows of the most primitive design. In many cases a vast amount of labor is spent in spading the ground. No harrows have been seen outside the buildings of the department of agriculture. The thrashing is done by hand; not a thrashing machine or fanning machine has been seen in use. The roads are as fine as any "pike," and just right for hauling by traction engines, while railways are still undeveloped.

The area of Cochin China is about 21,000 square miles—virtually a great level rice field—one-fifth of which is under cultivation. The draft animals are bullocks and carabaos. I believe that an American who knows farming machinery could open up a trade here which would soon grow to large proportions.

GERMANY.

MEMBERSHIP AND IMPORTANT WORK OF THE FARMERS' LEAGUE.

Consul-General Richard Guenther, of Frankfort, advises that the Farmers' League of Germany held its annual convention during the latter part of February, adding:

This agrarian body has now 290,000 members; its numerous branches scattered all through Germany held 8,586 county or district meetings last year. The Farmers' League also displays considerable commercial activity in purchasing and distributing agricultural requisites for the benefit of its members. Its department for agricultural machines and implements last year supplied of those articles to the value of $163,000, seeds to the amount of nearly $50,000, also feed and fertilizer stuffs valued at over $1,700,000. Its cooperative treasury transacted about $4,250,000 business last year.

MILKING MACHINES.

SUCCESSFUL USE IN GREAT BRITAIN—HOW OPERATED.

Special Agent Roland R. Dennis, writing from England, describes the succesful use of machines in milking cows in Scotland, in the following report:

Through the kindness of a Scotch friend I was given opportunities of seeing the practical working of two of the most successful systems of mechanical milkers. This same friend was also good enough to arrange that I could meet a gentleman of Edinburgh, who has been for years intimately connected with dairy interests and is considered an expert on all matters and mechanical appliances connected with the industry. This gentleman reviewed in a terse and most entertaining manner the history of Scotch milking machinery, which covered a term of more than twenty years, and is virtually the whole history of the success of a most practical and labor-saving instrument.

The very first efforts to supplant hand milking were made by an American, who conceived the idea of inserting a long tube in the cow's teat. The claim made was that a valve existed at the junction of the teat with the udder, and that as soon as this valve was raised by the end of the tube the milk would run out of the udder into the

pail placed in the same position as for hand milking. Experience proved that the valve was there, but it opened downward instead of upward, and this class of milker was soon discarded as worthless.

Then experiments were made using an exhaust pump, with rubber cases applied to the teats, and drawing the milk away by suction. This procedure was supposed to exactly duplicate the action of a calf in suckling. Experiments, however, soon developed two serious failings in this idea: first, keeping the teat in what might be called an "exhausted receiver" for six to ten minutes twice each day soon brought about an inflammation of the outer skin of the teat, owing to the lack of proper blood circulation, while the machine was attached; second, the milk, running from the cow to an inclosed pail, failed to come at all in contact with the outside air, and not being aereated it neither kept so well nor was as productive for cheese or butter as hand-milked milk.

A PULSATOR SOLVES THE QUESTION.

At this point mechanical milking came to a practical standstill for some years. However, that optimistic feeling that, fortunately for the world at large, seems to imbue the average inventor urged on the many who were endeavoring to work out to a successful ending this difficult proposition. At last a "pulsator" was tried and the question was solved. The pulsator is attached variously in the different systems, but always placed either on top of the pail or directly on the milking tube. It is a very simple, automatically working piston, held in place by a spring which is carefully adjusted according to the vacuum developed by the pump. The vacuum being formed the milk is drawn from the teat, and at the same time the piston of the valve is forced up against the spring by the natural air pressure of 15 pounds to the square inch. Attached to the valve piston is a rod, which actuates a small slide covering two small holes. As the piston moves forward the slide uncovers these holes, outside air rushes in, the vacuum is destroyed, and the milking ceases for an instant exactly the same as in hand milking. Then the spring behind the piston forces the piston back to its normal position, the slide covers the two small air holes, again the vacuum is formed anew, and the movement begins over again.

THE NEW MACHINE IN OPERATION.

Near Dumfries, Scotland, I saw what I considered much the better of the two principal systems work on a herd of 75 cows. The pump in use was a double-cylinder exhaust pump worked by an electric motor. The piping connecting with the pump was carried around the stable just under the molding on the front of the mangers, with a small lever stopcock placed in the pipe between each two of the cows. The machine makers much prefer to have the pipe carried overhead, about 6 feet from the floor, thus making it impossible for the cows to injure their heads or forelegs with the stopcocks. It was not so done, and rightly I thought, in this case, as the superintendent refused to have his handsome stable distigured by the pipe overhead. The droppings in the stable being cleared up and removed, the two men who adjusted the machines to the cows "washed up," taking care to include their heads in the operation, the motor was switched in and milking began, each cow's udder being carefully wiped with a

towel before the machine was attached. The cows evidently took kindly to the mechanical work, as I did not see one that offered the slightest resistance to the machine being placed. I was told that in nearly a year's use there had not been a single case of injury to any of the cows, and only in a very few cases had they been obliged to favor cows, unaccustomed to the machine, for the first day or two. The 75 cows were milked in less than an hour and a half. Ten milkers were used, which made the average total time consumed per milker per cow twelve minutes.

IRRIGATION PROJECTS.

ASIATIC TURKEY.

A LARGE CONTRACT AWARDED BY THE IMPERIAL GOVERNMENT.

Consul Ernest L. Harris, quotes from L'Impartial, of Smyrna, the following interesting notes on the irrigation of the plain of Koniah:

The Vilayet of Koniah is the largest province in Asiatic Turkey. It has an area of 36,000 square miles, or greater than the combined areas of the Kingdoms of Bavaria and Wurtemberg. Of this area, 944,000 acres are covered with forests, and 17,200 are cultivated. One-third of the total area is taken up by the saltings in the midst of which is the great salt lake of Kotch Hissar, with an area of 115 square miles. The numerous fossil shells and fishes found in the great arid plain extending to Koniah show that this high plateau, which rises 3,772 feet above sea level, must have been connected, at one time, with the Mediterranean.

Among the numerous fresh-water lakes of this province, the largest and most important is the lake of Bey Chehir, 58 miles to the west of Koniah. It has an area of 24,300 acres, and is fed by several streams flowing from the neighboring mountains. The difference between the lowest level, in November, and the highest level, in May, is over 16 feet. The overflow runs through the Bey Chehir River, 37 miles in length, into Lake Karaviran (or Soghlou Gueul) to the southwest. This lake, by means of several underground passages situated in rocky ground near the village of Avana, communicates with an underground lake or stream, the size and direction of which are not exactly known.

CULTIVATING LAKE BOTTOMS—WATER DISTRIBUTION.

Still farther to the east, the lake of Karaviran communicates, through a narrow valley, with the Tcherchembe River, which flows through the plain south of Koniah and loses itself in the saltings. However, under normal conditions, the entrance to the valley is about 13 feet above the lake level, so that the water can not overflow except at high level. If the Bey Chehir River supplies water in such quantities that the lake level rises by 5 feet or more, the underground passages referred to can not take care of all the overflow, which inundates the surroundings to an extent of several miles. If, on the other hand, the river supplies but a limited quantity of water, the lake of Karaviran empties itself through the underground passages and becomes, in greater part, a marsh. In this case, those parts of the lake bottom which are the highest, get quite dry, and make the best land for cultivation.

For distributing the water on those parts of the plateau best suited for cultivation, they have relied on the almost inexhaustible supply of Lake Bey Chehir, the water of which will be carried to the lands to be irrigated in a canal about 125 miles long, and for which the courses of the Bey Chehir and Tcherchembe rivers will be utilized as much as possible. These lands are situated southwest of Koniah, on both sides of the Bagdad Railway line, near the village and station of Tchoumra, and they measure an area of 106,200 acres in all.

The irrigating plans, in all their technical details, have been drawn, after surveys extending over three years, by H. & A. Waldrop, the engineers who have built the port of Haidar Pacha. The plans have been approved by the Imperial Government, and the agreement bearing upon them was signed on

November 24, 1907, by the Sublime Porte and the Anatolian Railway Company. By this agreement, the Imperial Government intrusts to the Anatolian Railway Company the execution of the work for account of the Ottoman Empire.

GENERAL PLANS.

The plans, in their general outlines, involve the following works:

The lake of Bey Chehir, toward the river and near the village of that name, will be closed by a barrage 200 feet in length and rising 13 feet above the mean level of the lake. This barrage will have 15 gates, by means of which the flow into the canal will be regulated. The river of Bey Chehir will be deepened wherever necessary up to 5 and 6 feet, and will be diked a little above its outlet into Lake Karaviran. This line of dikes will be provided with a few gates which, in the event of too much water having to be taken from Lake Bey Chehir, will allow an overflow in the underground passages.

Starting from the dikes, there will be a canal 18 miles long running around Lake Karaviran. This canal, 80 feet wide and 5 feet deep, will connect Bey Chehir River with Tcherchembe River, near the village of Tchal.

Lake Karaviran will be drained, and its area of 17,000 acres will be irrigated by the overflow into the underground passages. The river of Tcherchembe is here a regular torrent. From a picturesque gorge from 80 to 165 feet in width it falls in several cascades, from 10 to 13 feet high, into the narrow valley of Baliklava, and continues its winding course beyond the village of Appa toward the plain south of Koniah. But the river bed is very unequal and rises suddenly in several places, which, in times of flood, causes inundations. This bed, therefore, will be regulated. In the first 15 miles, where the grade is about 1 in 500, dams will be constructed at six of the larger falls. Fifteen of the 22 miles remaining will have to be dredged. A little beyond the district of Appa the river bed runs lower than the lands to be irrigated, which then rise in the direction of Koniah. This bed, therefore, can not serve as a canal, and it will be abandoned beyond Appa, near the farm of Yalid. The water will be led up to Tchoumra on an aqueduct 80 feet in length over the Tcherchembe River, which there suddenly turns to the south and runs 33 feet under the aqueduct. Of the 125 miles of total canal length, 64 miles have to be dug out, and besides the great barrage near Bey Chehir there will be 5 other barrages with gates.

EXCAVATING WORK—VAST BENEFITS.

From this main canal the water will be led to the lands to be irrigated in hundreds of distributing channels of a total length of 1,250 miles. This work will call for the removal of 13 million cubic yards of earth. The irrigated lands on both sides of the Bagdad Railway and between Koniah and Karaman, measuring 114,000 acres, and the 17,000 acres reclaimed from the lake of Karaviran, will require 7 billion cubic feet of water per annum.

By accurate measurements, since November, 1904, of the overflow into Bey Chehir River from Bey Chehir Lake it has been ascertained that even in years of drought a supply of over 8 billion cubic feet of water can be relied upon. The year before last the overflow amounted to nearly 14 billion cubic feet and this year, until November 1, to 21 billions. Careful observations and measurements have further shown that evaporation through climatic causes is so small (not even 18 inches per year in the lake of Bey Chehir) that it need not be taken into consideration. There will even be enough water to irrigate, later on, millions of acres of new lands without carrying out further works.

It is figured that expenses will not exceed $31 per acre, which constitutes a very favorable average in comparison with similar undertakings in recent years.

The province of Koniah and the whole of the Ottoman Empire will derive an immense profit from this undertaking, although it is probable that its advantages will not appear from the very first years. The irrigation lands will have to be settled by immigrants who would be supplied, gratuitously at first, with what they may require for their work.

The Ottoman Government will draw considerable profit from the enterprise, as, owing to the increase of traffic on the Anatolian and the Bagdad railways, at first through the transportation of materials necessary for the irrigation works and then through the increase of products from the cultivated lands (the production of wheat alone will furnish an additional 20,000 carloads per annum), the Imperial Government will have to pay less, and eventually perhaps nothing, as mileage guaranty. This considerable increase in the revenues

will also profit immensely to the Anatolian and the Bagdad railways, to the ports of Haidar Pacha and Derindje, and, after the construction of the Eregli-Adana branch, to the Mersina-Adana Railway and to the port of Mersina.

[A map of the regions under discussion was forwarded by Consul Harris, and may be seen at the Bureau of Manufactures.]

MEXICO.

AVAILABILITY OF THE RIO GRANDE FOR IRRIGATION AND NAVIGATION.

Consul Clarence A. Miller, of Matamoras, reports that although the agitation for the abandonment of the Rio Grande as a navigable stream is still confined to the Texas side of the river, it presents a question of importance to both sides. He writes:

All parties concede the necessity and importance of irrigation, but while this has been successfully developed, to a certain extent, on the Texas side of the river, it has not really been commenced on the Mexican side. As the character of the land is the same on both sides, the conditions for successful irrigation are just as favorable on the Mexican as on the Texas side. The Mexican law, which prohibits foreigners from buying land within 20 leagues (about 60 miles) of the river has kept out American capital available for its development.

Whether the supply of water is and will be sufficient for both purposes is a question for engineering experts to solve. Practical men, who seem to be conversant with the entire situation, estimate that the irrigating canals, when in full operation, will consume at least one-third or one-half the water supply of the river. My personal opinion is that the river can be made navigable from its mouth to Brownsville without interfering with irrigation interests. Above Brownsville navigation would be of little profit to either country.

CANADIAN FARM ANIMALS.

DAIRY AND BEEF CATTLE—DECADENCE OF SHEEP-RAISING INDUSTRY.

Consul H. D. Van Sant, of Kingston, advises that the Canadian minister of agriculture in a recent address at the convention of the National Live Stock Association, pointed out that while the raising of first-class dairy and beef cattle had been carried on successfully and splendid breeds of horses were being raised all over Canada, the very important industry of sheep raising had been almost wholly neglected and the Canadian trade in woolen goods had suffered in consequence. The Americans were said to lead the world in the breeding of live stock and the raising of horses, and yet they were anxious to get hold of some of the best product of Canadian breeding. The speaker said the French-Canadian cow was the most profitable cow in Canada and prophesied that it would soon be known as the "greatest butter-producing machine in the world."

TRANSPORTATION.

WORLD'S STEAMSHIP LINES.

UNITED KINGDOM.

NEW QUALIFICATIONS FOR SEAMEN—RECORD OF PASSENGER TRAVEL.

Consul John L. Griffiths, of Liverpool, sends the following summary of new regulations that have been legalized for the operation of the British merchant marine:

Section 58 of the merchant shipping act of 1906 was put into operation on June 1, 1907. Under that section of the law no seaman is allowed to engage on board a British ship as an "A. B." unless he can prove three years' service before the mast, of which not more than two years' service shall have been on decked fishing vessels. Seamen who are qualified for the rating of A. B. are urged to make application either to a superintendent of a mercantile marine office in the United Kingdom or to the registrar-general of shipping and seamen, London, for certification of their title to be rated as A. B., producing at the same time their "continuous discharge books," or other satisfactory proof of their service at sea.

FOREIGNERS EMPLOYED ON BRITISH VESSELS.

Over 220,000 men are engaged on British merchant vessels, exclusive of Lascars and Asiatic seamen, who are largely employed on steamers trading to the Far East. According to a return issued by the British Government two years ago 39,000 were foreigners. It is the desire of the British community to have British ships manned by British crews, and to do this it will be necessary to train yearly a number of boys to serve in merchant vessels. A few years ago a departmental committee appointed by the board of trade investigated the question of the supply and training of boy seamen. The committee in its report stated it was desirable that merchant seamen should be more thoroughly and systematically trained, and that the scope of the employment of British subjects at sea should be extended. Referring to the advantage to be gained by the training afforded to boys by the Marine Society of England, which exists for the training and equipment of boys as seamen, the committee said:

> As an object of what may be accomplished through a seagoing training ship, we desire to make special reference to the Port Jackson, which recently took 100 boys from the Warspite on a ten months' voyage to Australia and back. The arrangement for their instruction appears to have been singularly efficient, and it is satisfactory to learn that at the end of the cruise no difficulty has been experienced in obtaining employment for all of them at sea. Six of them have joined the royal navy and the remaining 94 have entered the merchant service, mostly as ordinary seamen.

The Marine Society is maintained by public subscription, and it is stated to be the desire and intention of this society to continue

annually this ocean-training scheme provided the British public is sufficiently interested in the undertaking to furnish the necessary money.

KNOWLEDGE OF ENGLISH LANGUAGE—CERTIFICATED COOKS.

A new law came into force on January 1, 1908, providing that no foreign seaman will be permitted to engage on any British ship at any port in the British Islands, or on the continent of Europe between the river Elbe and Brest, unless he possesses a sufficient knowledge of the English language to understand the necessary orders that may be given to him in the course of the performance of his duties. To meet the requirements of the new law foreign seamen who have been serving on British ships have been notified to make application to a superintendent of a mercantile marine office, or to a British consul, who, on receipt of the application, will be prepared to examine them as to their knowledge of English, and if that knowledge is sufficient, the fact will be certified on their continuous discharge books.

Every British foreign-going ship of 1,000 tons and upward gross tonnage, on and after July 1, 1908, going to sea from any place in the British Isles, or on the continent of Europe between the river Elbe and Brest inclusive, will be required, in accordance with the merchant shipping act of 1906, to carry a duly certified cook. In order to be deemed duly certified within the meaning of the section a cook must (*a*) be the holder of a certificate of competency in cooking and be able to prove one month's service at sea in some capacity, or (*b*) the holder of certificates of discharge showing at least two years' service as cook previously to June 30, 1908. The Government will approve schools of cookery for the purpose of granting certificates of competency, and schools desirous of obtaining approval must apply to the board of trade. 'Schools have already applied and been approved.

Such schools will be liable to inspection from time to time, and the board of trade may at any time withdraw their approval if they consider that a school has fallen below the requisite standard of efficiency. Any candidate passing a satisfactory examination conducted by an approved school of cookery will be granted a certificate of competency provided the candidate is at least 18 years of age. Seamen who have performed two years' service as cook and who are therefore duly qualified for the purposes of the law without obtaining a certificate of competency will have to produce satisfactory proof of their service. In the absence of such proof their service will not be recognized.

STEAMSHIP PASSENGER RETURNS.

The new regulations with regard to the returns to be furnished by the masters of vessels as to passengers carried, which were made by the board of trade in the merchant shipping act of 1906, have come into force. They provide that the master of every ship, whether British or foreign, which carries any passenger from a place in the United Kingdom, and is bound for any place out of Europe, and not within the Mediterranean Sea, shall at every port in the United Kingdom at which a passenger is embarked, furnish a return giving the ship's name, registered tonnage, aggregate number of superficial feet in the several compartments set apart for passengers, other than

Should such a new steamship line be established, it would materially shorten the time for mail and passengers from New York to Buenos Aires and Montevideo, via the Trans-Andean Railway from Valparaiso to Buenos Aires, during six months of the year at present, and, when the Andean tunnel is completed, for the entire year. An examination of the map will reveal the fact that the above-named cities are much nearer New York via Valparaiso and Panama than via the Atlantic. Valparaiso is almost directly south of Pittsburg, and shipping need not vary much more than 500 miles from a direct southern line to reach this city.

CANADA.

SHIPBUILDERS FEEL COMPETITION OF BRITISH-BUILT VESSELS.

Consul A. G. Seyfert, of Collingwood, furnishes the following information concerning Canadian shipbuilding on the Great Lakes, and how the industry is hampered by the free admission of vessels of British registry:

There are in Canada a number of plants and yards well equipped for building steel vessels, the largest of which, and the most modern in equipment on the upper lakes, is located at Collingwood. A year ago 1,000 men were employed at this plant. During the greater part of the past winter the yard has been closed, but in the middle of March the yard was again opened and several hundred men employed. The company has just secured the contract to build a single-screw package-freight and passenger steamer at a cost of $500,000. The classification of the steamer will be of the highest of the Great Lakes register, with a length of 365 feet and a displacement of 6,500 tons. The contract calls for the vessel to be completed by the opening of navigation in 1909. If other contemplated work is secured, the plant will be reasonably busy during the coming year.

The shipbuilding companies in Canada feel most keenly, it is claimed, the competition of British-built ships. There is a heavy duty on most of the material imported for construction work from Great Britain and the United States. The coal for construction, which is a large item, is subject to a duty of 53 cents a ton, while vessels thoroughly equipped in every particular come from the shipyards of Great Britain duty free [if registered under the British flag since 1902.—B. of M.].

Old American vessels are bought, repaired in American yards, and then brought to Canada, after having paid duty on the original cost. The Canadian government is asked to grant a bounty to the shipbuilding industries, sufficient to put them on a competing basis with British builders, and to impose on American repair work to Canadian ships a duty of 50 per cent on the cost of such repairs.

The Canadian Marine Register shows 300 old American-built steamships, 170 American sailing vessels, and 97 British-built ships. About 60,000,000 tons of products are carried eastward over the Great Lakes yearly, of which Canadian vessels carry less than 3 per cent, so it seems evident that the growth of Canadian shipbuilding and shipping has not kept pace with the general growth and progress of the country.

cabin voyagers, and the number of statute adults which the ship can carry legally; while detailed information has to be supplied as to British and alien passengers, including name, occupation, and in case of adults, whether accompanied by husband or wife, or whether single.

The port at which passengers have contracted to land has also to be given. Similar information must also be furnished in regard to passengers to the United Kingdom from any place out of Europe and not within the Mediterranean Sea, the only difference being that the ports at which passengers have been landed have to be inserted, and in the case of aliens it has to be stated whether they hold through tickets, while a return has also to be made of the births and deaths on the voyage. The returns have to be prepared in duplicate, and delivered to the collector, or chief officer of customs, and the emigration officer. A third schedule must be filled up and handed to the customs officer, giving information as to passengers proceeding from the United Kingdom to any port on the continent of Europe or within the Mediterranean Sea.

CHILE.

IMPROVED STEAMSHIP FACILITIES ON SOUTH AMERICAN COAST.

Consul Alfred A. Winslow reports from Valparaiso that the Chilean Government is seriously studying the question of better and faster steamship connection with Panama, the following details showing the improved transportation facilities which will probably be afforded American exporters to Chile.

A bill has been introduced into Congress empowering the President of Chile to enter into contract with a steamship company for a period of five years for a line of steamers to make the trip within eight days, at a cost to the Government of not to exceed £20,000 (approximately $100,000) per year. The importance of a quicker service between Valparaiso and the United States is fully understood in Chile, and it seems quite probable that something may be done by the Chilean Government sooner or later, if nothing else develops. It is not supposed that this amount will provide for more than two boats per month.

This is an indication of the trade tendencies and should be taken advantage of by the American exporter. Now is the time to get in touch with the real conditions. There is an opening here for nearly everything in the line of manufactures, as but little is manufactured in Chile.

SUGGESTIONS TO AMERICAN EXPORTERS.

The American exporter should not be too easily discouraged. It may be quite possible that the salesman may not meet with success the first trip, or for the first few months he is in the country. This may be the case often and it is not strange either when it is understood that he must compete with English and German salesmen and agents who are familiar with all the conditions and are strongly fortified. They will not give up a foot of ground unless they are compelled to do so. To accomplish this is certain to take time and money. There is no question but that it will pay well in this case, and it is the only successful way to get the trade of a part of the world that is exceedingly rich in natural sources and that is developing rapidly.

the world. This line has been running small freighters for some time, but the present vessel of 5,242 net tons is the first large one, and the first equipped to accommodate passengers as well as freight.

Four sister ships are building for the run, one of which, the Ceylon, is said to be almost completed. It is planned to have a ship with passenger accommodations sailing from Hongkong every forty-five days.

The ports of call are Antwerp, Dunkerque, La Pollice, Marseille, Genoa, Naples, Colombo, Singapore, and Hongkong on the Suez portion of the run. From Hongkong the ships will go to Shanghai, Chin Wan Tao, Kobe, Yokohama, Honolulu, San Francisco, Vancouver, Tacoma, Seattle, Guaymas, and Mexican coast ports, Straits of Magellan, Buenos Aires, and Montevideo, the entire voyage taking about seven months. Fares for the entire trip around the world have not yet been announced. From Hongkong to San Francisco the first-class fare is £38 ($185).

GERMANY.

LAST YEAR'S SHIPBUILDING RECORD A LARGE ONE—PRESENT SLACKENING.

Consul-General Richard Guenther, in writing from Frankfort that during the past year the shipyards of Germany were well employed, gives the following facts:

There were built 435 steamships with a total of 311,105 gross register tonnage, and 516 sailing vessels aggregating 57,337 gross register tonnage, while 203 steamships (369,172 gross register tonnage) and 270 sailing ships (47,015 gross register tonnage) were on the stocks in course of construction at the end of 1907. Of the steamships turned out and in course of building 38 were men-of-war, having a total of 128,088 gross register tonnage.

In addition, 67 steamships (162,278 tons) and 145 sailing vessels (38,650 tons) were either built or in course of building at foreign shipyards for German account last year. As an offset to this, 112 steam and sail vessels were built in German yards during the past year for foreign countries. There were still on the stocks, at the end of December, 29 steam and sail ships (total 13,600 tonnage) which were ordered by foreign customers. The outlook for German shipbuilding interests in 1908 does not appear so promising, foreign trade and business in general taking a relatively downward course.

VENEZUELA.

AMERICAN FLAG COVERED NEARLY ALL THE SHIPPING AT MARACAIBO.

Consul E. H. Plumacher supplies the following information concerning the shipping at the Venezuelan port of Maracaibo:

During the year 1907, 54 steamships flying the American flag entered the port of Maracaibo. These vessels ply between New York, Porto Rico, Curaçoa, and Puerto Cabello, and Maracaibo. For the special service of Maracaibo the company runs three fine steamships, equipped for passenger and cargo services, and it is seldom any of these boats have a berth unoccupied. The steamers also carry the mail, and never fail to keep schedule time. No other steamships

called at Maracaibo, but 23 Danish sailing vessels, with cargoes from Hamburg, entered the port in 1907. These Danish vessels carry, as return cargoes, wood and dyestuffs. Formerly many French, Italian, and British sailing ships called at Maracaibo, but none of these appeared in 1907. A brisk trade is carried on with Curaçoa in small schooners, bringing products unloaded at that place from large European steamships, and returning to Curaçoa with Venezuelan products to be reloaded on the same steamships for Europe.

RAILWAY SYSTEMS.

SWITZERLAND.

MANAGEMENT OF THE GOVERNMENT LINES—RATES AND TRAVEL.

Consul R. E. Mansfield, writing from Lucerne, furnishes the following description of the operation of Swiss railways:

In Switzerland Government ownership of public utilities is general. Most of the railways and all of the telegraph and telephone service are owned and operated by the Federal Government. In addition to these is the parcels post, which provides facilities for transporting all classes of articles within reasonable weight at a nominal cost.

The Government ownership of railways, although not complete, will soon cover the entire system of the country. The steam railways in Switzerland represent 2,111 miles, of which 1,529 miles, or nearly three-fourths of the total, are owned and operated by the Government. The State properties include all the principal lines in the Confederation, except the St. Gotthard, which is the direct route from Lucerne to Milan, by way of lakes Lugano, Locarno, and Como. Arrangements are being made to add this important link to the chain of Government properties, but concessions having been made to Italy and Germany when the road was constructed the negotiation of treaties for the release of those concessions has delayed the acquisition of the property by the Swiss Government. The other roads under private or corporate ownership are short lines, used as branches or feeders for the main system, extending into important agricultural valleys or industrial districts.

Since the acquisition of the majority of the railways by the Government the roads have been greatly improved in their physical condition and in the service. Schedules have been adjusted and systematized, freight and passenger rates equalized and greatly reduced.

PASSENGER TRAINS.

The train service in Switzerland is generally good. A sufficient number of trains is run on all the roads to provide ample facilities for all demands of traffic. The schedules are well arranged and trains usually run on time. The employees are universally polite and attentive to passengers, and a strict enforcement of the rules governing the roads is observed. The system of forwarding luggage, which, like the railways, is under Government control, is prompt and safe. Of the hundreds of thousands of pieces transported annually few are missent and almost none are lost.

Provisions are made for first, second, and third class passengers, and the majority of trains carry cars for all the different classes.

Some of the express trains carry only first and second, and some of the through trains only first-class cars. The second-class cars are the most popular on Swiss trains, as they are quite as comfortable as the first class, the only difference being in the quality of the upholstering. The majority of the Swiss people patronize the third-class coaches, as the fares are low and the cars comfortable. The Swiss passenger coaches are divided into compartments, and the more modern in the first and second class are corridor cars. They are well lighted, ventilated, and heated, and provided with lavatories and toilet rooms.

The express trains carry dining cars, in all of which there is good service at reasonable cost. This service is also under Government control. The third-class cars are usually divided into two sections instead of compartments, with a center aisle. The seats are not upholstered, but each car is provided with ample space for luggage, good heating facilities, and a lavatory.

PASSENGER RATES.

Passenger rates on the Swiss railways are not excessively high in the first class, while the second is reasonable, and the third class low. The first-class fare is 3.22 cents per mile; the second 2.25 cents per mile, while the maximum rate for third-class is only 1.6 cents per mile. In addition to the regular tickets the railways in Switzerland have a system of "abonnements," or time tickets, which afford opportunities for exceedingly cheap travel throughout all parts of the country. They are issued in the name and must have attached a photograph of the purchaser. They are good on practically all the roads in the Confederation, a map being attached to each ticket showing the lines over which it will be accepted. The abonnements are issued for a designated period, with no restrictions for the amount of travel during the time. The time limit and cost are as follows:

	First class.	Second class.	Third class.
15 days	$15.44	$10.61	$7.72
30 days	23.16	16.40	11.58
45 days	30.88	21.23	15.44
3 months	54.04	37.63	27.02
6 months	84.92	59.83	42.46
1 year	133.17	93.60	66.58

On regular return trip tickets the reduction is equal to 32 per cent.

TRAINS AND PASSENGERS.

During the year 1906, the latest available railway statistics, there were run over the Government railways in Switzerland 378,311 regular passenger trains; mixed trains carrying passengers and freight, 46,623; extra or special passenger trains, 3,946; freight trains, regular and supplemental, 154,981.

The number of passengers carried in 1906 was 64,874,109, who paid in fares $13,511,913. The amount paid for transportation of luggage, general freight, and cargo of all kinds, was $18,226,012, making a total income from Government railways for the year 1906 of $31,737,925.

Of the many million passengers carried during the year and the great number of employees in all the departments of the Government

railways, the accidents numbered only 1,282; 53 passengers were killed and 1,187 injured.

Practically all the railway cars, both passenger and freight, as well as locomotives, switches, signals, and other equipment necessary to the operation of the roads in Switzerland, are built at the Government shops at Winterthur. The supply and equipment department is under the same direction as the roads.

Railways constitute a department of the Government. The management and direction is in the hands of a commission consisting of five members, which is appointed by the Federal Council for a term of three years. This directorate has absolute control of the railway business of the Republic, including the traffic management, establishing of rates, the construction, supply and equipment departments, the purchasing of all materials and supplies, construction of cars, locomotives, etc. The commission is responsible only to the Parliament. The president of the department of railways receives a salary of 18,000 francs a year, equal to $3,474. The other members of the directorate receive an annual compensation of 15,000 francs, equivalent to $2,895.

DIVISIONS, WAGES, STATIONS, AND EXPENDITURES.

As a means of facilitating the business the railway system of the country is divided into four sections, designated as the Basle, Lausanne, St. Gall, and Zürich districts, with subdirectorates for each. When the St. Gotthard road is added to the Government properties another division to be known as the Lucerne district will be created.

The wages paid to the employees on the Government railways are the same as those paid by the roads under private and corporate management in the country. There is apparently no dissatisfaction among the Government railway employees, and the standard maintained among the different classes compares favorably with those on private roads.

The stations as a rule are ample in proportion and equipped with all the necessary facilities for handling the passenger and freight traffic. The station offices and waiting rooms are well cared for, train sheds are large, and the trackage and switch facilities equal to or better than those found on railways operated under private ownership in most countries. The system of tickets, which gives one the option of traveling over different lines to reach a certain destination, where the difference in distance is not great, is an advantage not offered on private roads.

The law governing the Federal railways positively prohibits the possibility of political influence entering into the management. It also provides that all revenues received from the Government railways shall be expended in the improvement and maintenance of the roads. If a surplus accumulates, rates are adjusted to equalize the revenues and expenses, thereby giving the people the benefit of lower fares. This method insures the maintenance of a high standard of excellence in the service and prevents the application of the revenues of one department of the Government to the use of another.

As organized, and under the present management, the Government railways of the Swiss Confederation are successful and prosperous. The traveling public is apparently satisfied with the service, and the *Government* is gratified with the result.

CANADA.

TRAFFIC, RECEIPTS, AND EXPENDITURES DURING THE LAST FISCAL YEAR.

The following additional statistical information on the railways of Canada is furnished from official returns by Consul Alfred J. Fleming, of Yarmouth:

The mileage of the railways of Canada at the close of the year ended June 30, 1907, was distributed as follows among the several provinces: Ontario, 7,637; Quebec, 3,515; Manitoba, 3,074; Saskatchewan, 2,024; New Brunswick, 1,502; British Columbia, 1,685; Nova Scotia, 1,329; Alberta, 1,323; Prince Edward Island, 267; Yukon, 96; total, 22,452 miles. With double tracks, sidings, and spurs, the mileage amounted to 27,611 miles.

The Dominion and provincial governments have aided these railroads to the amount of $181,298,412, besides land grants as follows: Government lands, 31,762,945 acres; provincial lands, 20,420,109 acres; total, 52,183,054 acres.

Comparing the rate of capitalization, per mile, of Canadian roads with those of foreign countries, the official report gives the following results: Dominion of Canada, $56,995; United States, $67,936; United Kingdom, $273,437; New South Wales, $63,063; Victoria, $56,113; India, $56,796.

The traffic during the year was as follows: Passengers carried, 32,137,319; passenger earnings, $15,730,652; freight carried, 63,866,135 tons; freight earnings, $95,738,079; operating expenses, $103,748,672.

There are ten railways in Nova Scotia, counting the Intercolonial, a government built and operated road, which has 485 miles in the province. The other nine roads have a mileage of only 844 miles, and their total capital is estimated at $24,886,150. The railways of Nova Scotia, other than the Dominion and Atlantic and the Halifax Southwestern, both having a mileage of 369 miles, are primarily coal roads, and passengers and freight are only incidentals.

ITALY.

MILAN MUNICIPAL STATION—RAILWAY POWER AND NEW LINES.

Consul James E. Dunning, of Milan, forwards the following report made by Clerk Siersdorfer, of the consulate, relative to the establishment of power stations in Italy:

The communal council of Milan, in accepting the conditions of the committee appointed for the construction of a hydro-electric installation in the Alpine hills north of the city, which provides for a generating station of sufficient power to meet the probable demands for current, has authorized the requisite outlay for the work, $2,546,640, to be raised by a loan guaranteed by the council.

It is announced that a syndicate has been formed in Rome to provide a thermoelectric generating station at Treni, in Apulia, to produce current to work three railways, viz, from Treni to Corato, from Treni to Andria, from Fernandino to Trinitanople. The station will also supply current to surrounding towns.

Important steps have been taken for the building of railways in North Italy. *(1)* The Lake Garda line, to run from Riva di Trento,

along Lake Garda, to Verona, 48¼ miles, standard gage, electric traction, and (2) a network of lines by which direct access from the province of Belluno, via Cortina, to the Austrian State railways will be secured, the first line, as that of most pressing need, to be from the city of Belluno via Bribiano to Agordo.

CARRIAGES IN MESOPOTAMIA.

AMERICAN VEHICLES MUCH NEEDED IN THE BAGDAD REGION.

Since the publication in the Consular and Trade Reports of his request for catalogues of various manufactured goods Consul William C. Magelssen, of Bagdad, has received a number of inquiries from American carriage builders relative to trade along this line in Mesopotamia. Mr. Magelssen therefore submits the following observations, gained while traveling in that part of Asiatic Turkey:

Inasmuch as Bagdad is the most important trade center in the Mesopotamian Valley there is naturally at all times a large number of merchants and traders going between this city and the regions to the north, to Persia and to the districts lying to the southwest. However, the Mohammedan pilgrims who come from many lands to worship in the holy cities of Kerbela and Nejef make up the great majority of visitors to Bagdad, and their number is said to be nearly 80,000 yearly. Pilgrims from India reach Bagdad by river steamer from Bassora and proceed in carriages to Kerbela and Nejef, while those who arrive from South Russia and Persia come on horseback, in sedan chairs, in double baskets fastened to a mule's back, or on foot.

No carriage roads exist in Persia in the districts through which they must come, and they can not avail themselves of carriage travel before the Turkish frontier is reached at Khanikin. Rather than dispose of the animals that have carried them hundreds of miles they continue their journey in slow stages down through Mesopotamia until the shrines have been reached, and return in the same manner. The well-to-do class of pilgrims sometimes engage carriages at Khanikin, but their number is very limited, and carriage traffic on the Bagdad-Khanikin road is never heavy.

A MUCH-TRAVELED HIGHWAY.

The road between Khanikin and Nejef through Bagdad is undoubtedly the busiest in the Turkish Empire. One meets in a day's travel dozens of caravans, each numbering from 75 to 150 or more camels, led by a gaudily bedecked animal carrying on its back an embroidered flag of many colors. There are hundreds of pack mules and tiny, quick-stepping donkeys loaded down with merchandise of diverse varieties. The latter beast of burden is really the Mesopotamian "express and fast mail." The wagons are of one kind—a clumsily built creation of the wagonette pattern. They are manufactured in Bagdad and sold at about $100, but are both heavy and uncomfortable. The top is built of wood and the sides have wooden shutters in place of curtains. They have seating capacity for 8 passengers, but frequently as many as 12 persons will crowd into one carriage; the seats have no cushions, which is well from a sanitary point of *view.*

The rear of the carriages is built higher than the front and it is difficult to enter without assistance. I found exit through a window to be the most convenient, as the top and hub of wheel could then be stepped on. The running gears of the carriages bear no sign of paint, but all have curious objects painted on the door and sometimes inside to keep off the "evil eye." The hubs of these conveyances seem to contract, while the axles appear to lengthen, and a drive in a Mesopotamian carriage is apt to produce a feeling akin to seasickness. It is disagreeable, as the swaying motion keeps one in constant dread that the wheels are slipping off.

THE TRIP TO NEJEF.

The journey from Bagdad to Nejef, a distance of 105 miles, is accomplished in two days. The start is made from Bagdad at 4 o'clock in the morning, the carriage being drawn by four horses or mules, and two changes are made before the Euphrates River is reached. There is no bridge there sufficiently strong to permit a carriage to pass over and passengers must cross on foot to the other side, where another vehicle is entered and another lot of animals hitched on. These latter pull the carriage through to Kerbela, where the night is spent, and at 4 the next morning another carriage company takes the weary traveler in hand, and after making four changes of animals manages to deposit him in Nejef in the early afternoon. It will be seen that in order to make the round trip a considerable number of horses and mules must be employed. All carriages are drawn by two teams.

Transportation rates between Bagdad and Kerbela vary between 20 piasters ($0.88) and 60 piasters ($2.64) per seat, according to season, while between Kerbela and Nejef they are inclined to be higher.

The horses employed on these carriages are of the poorest, being purchased at not exceeding $20. The mules are of a better class and cost as much as $80 per head. Their upkeep is said to average about 20 cents per day. The driver provides his own license at a cost of about 45 cents, good for a year, and receives a monthly salary equal to $6.80; he employs an assistant who shares his wages.

The maintenance of the carriage service would appear to be expensive, for the horses are driven at breakneck speed and have little time for rest, as they return the following day. Although the animals are changed, the harness is not, and I have seen a small horse put into a big mule's collar and a big mule placed in the harness of a small horse; the results are obvious. The carriages are constructed of cheap material and can not last long, even on the level and rockless Mesopotamian country.

CARRIAGE LINES TO HILLAH, TO MUAZZEM, AND IN BAGDAD.

To Hillah, near ancient Babylon, carriages to the number of twelve, of the same class as the aforementioned, run every day, and fares vary according to season. Hillah is reached in twelve hours. Another line runs to Samarra; the distance is covered in ten hours, with but one change of animals. In Samarra lie buried two Mohammedan martyrs and, as large numbers of pilgrims journey to their tombs, traffic on this road is considerable.

There is no regular carriage service to Khanikin, but it is always possible to engage *vehicles* for the trip. Near the Persian frontier

the country is hilly and rough and it is preferable to travel on horseback.

About forty carriages are in daily operation between Bagdad and Muazzem, a suburb. The trip is made in half an hour and a charge equal to 25 cents is made. The carriages are mostly old landaus, of Bombay and Aleppo construction, and it is a marvel that they manage to carry the number of passengers who manage to crowd into them.

In the city of Bagdad about twenty-five carriages are in operation, and the number is gradually increasing. These are of Bombay and Aleppo manufacture, while an occasional European victoria is to be seen. There is no established tariff and a drive through the streets of the "fairy-land city on the Tigris" is likely to prove an expensive luxury.

OVERCOMING OBJECTIONS TO AMERICAN VEHICLES.

A good market can be created here for American carriages if a proper introduction is made. I have shown catalogues of well-known American carriage builders to local parties and they all agree that the prices quoted are cheap and attractive, but they object to the light construction of the carriages and refuse to believe that they are suitable for heavy traffic. That American-built carriages are well suited for traffic in this part of the world has been fully established in Palestine, where they are successfully and regularly run between Haifa and the Sea of Gallilee. There the country is hilly and rough. The drivers have told me that they have experimented with many kinds of carriages and find the American to be the best. The life of the local horse could be considerably lengthened if lighter carriages were introduced here, the owners would benefit by the splendid construction and wearing properties of the American-made carriage, and surely the travelers would appreciate the change.

One of the veteran American carriage manufacturers wrote some time ago that in the early stages the growth in the export business in carriages was slow, and that it took pluck and patience to persuade foreign buyers to accept the light-weight construction of the running gears of our vehicles, and that on account of their lightness the name of "spider" was given them, and that this name still clings to our carriages in many foreign countries. The same manufacturer writes of the British market as follows:

> The pioneers in introducing American-made vehicles into England found it a severe and difficult task. The Britishers would hardly take time to look at the "spiders" or the light-constructed rolling stock made in America, except to view them as curiosities, and many persons calling at salesrooms in the West End of London were actually afraid to get into the buggies as they stood perfectly still and without horses. But after a long and hard fight a few venturesome people were induced to take the buggies out on the roads and put them into use. From this on the business in American-made vehicles in the British Isles has developed. Our English experiences in the introduction of American-made carriages were reproduced in all countries where they are now used.

So it will be in Mesopotamia. [American manufacturers are invited by the consul to correspond with a number of Bagdad firms whom he names, a list of which may be secured from the Bureau of Manufactures.]

ROADS IN SWITZERLAND.

FINANCIAL MEASURES BY WHICH GOOD HIGHWAYS ARE SECURED.

Vice-Consul Leo J. Frankenthal, of Berne, makes the following report on the cost of road-making in Switzerland:

There are no statistics covering the total expenditures of all Switzerland for the building and maintenance of roads, as neither the Swiss Federal statistical office nor individual Swiss economists have, up to date, been able to devote the length of time that would be required for the preparation of such figures, culled from the reports of the twenty-five cantons and half cantons and the two thousand odd Gemeinden. Varying administrative methods and deficiency of material, particularly with regard to the Gemeinden, add greatly to the difficulty of a systematic presentation of the subject.

The constitution of Switzerland gives the Federal Government the right to exercise general oversight over such roads and bridges in the maintenance of which it is interested. There is, however, no Federal road legislation, and the building and maintenance of roads is a matter of cantonal supervision. The outlay for the building and maintenance of roads is met as follows:

SUBVENTIONS AND INDEMNITIES.

First, by subventions of the Federal Government granted to the cantons upon petition of the interested canton, and after passage by the Swiss national assembly (Congress). For the period 1894–1905 the sum of such Federal subventions reach 4,730,000 francs, of which over 2,400,000 francs was paid to the Canton Uri (franc=19.3 cents).

Second, by the annual indemnity to certain cantons provided by paragraph 3 of article 30 of the Swiss Federal constitution, which reads as follows:

> By exception, and by reason of their international Alpine roads, the cantons Uri, Graubünden, Tessin, and Wallis receive an annual indemnity, which, in consideration of all the circumstances, is fixed in francs as follows: Uri, 80,000; Graubünden, 200,000; Tessin, 200,000, and Wallis, 50,000. The sums due these cantons shall be retained by the Federal Government if the Alpine roads mentioned are not kept by them in suitable condition.

This yearly indemnity is, of course, paid without regard to further subventions which may be allowed by congress, as mentioned in the first statement.

Third, by the outlay of the individual cantons for the building and maintenance of cantonal roads, and the proportion of the expenditures for Gemeinde roads and streets that may be fixed by cantonal law. The Canton Berne, for instance, pays from 25 to 70 per cent of the cost of Gemeinde roads, according to the importance of the road and the financial conditions of the Gemeinde. Zürich provides three classes of roads; those of the second and third class must be built and corrected by the Gemeinden, but the canton participates in the expense of second-class roads from 20 to 50 per cent, the proportion to be ascertained by the cantonal council in consideration of the importance of the road and the financial standing of the Gemeinde, as in Berne. For third-class roads, up to 30 per cent is paid for erection by the canton itself. The maintenance of first and second class roads is cantonal.

LARGE ORIGINAL OUTLAY.

Graubünden's expenditures for roads have reached large sums, and the yearly budget of the canton provides a sum of 120,000 francs for building and 43,000 francs for the maintenance of Gemeinde roads, as well as 249,700 francs for roads of commercial importance; also 35,000 francs for repairs. It is interesting to note that a large proportion of the public debt of this canton was due to loans for the purpose of its "road account." They were 880,000 francs in 1825 for the Bernhard road, 4,598,000 francs in 1865, 5,038,000 francs in 1872, 6,802,000 francs in 1877, 6,575,000 francs in 1882, and 6,300,000 francs in 1885. All these loans have since been amortised. The Canton Tessin gives no financial aid to the Gemeinden for roads.

It may be estimated roughly that the average expenditures of the cantons for roads, maintenance, etc., reaches one-sixth or one-seventh of their total expenses, and as the total expenditures of all the cantons was 133,000,000 francs in 1904 and 130,000,000 francs in 1903, their outlay for the roads may be fixed approximately at from 17,000,000 to 20,000,000 francs.

Fourth, by the outlay of the Gemeinden for local streets and roads, representing purely local expenses, aided by their quota from the canton, as explained in the third statement. Data collected in several cantons show the outlay for Gemeinde roads and corrections of same to vary from 9 per cent of the total Gemeinde expenses in Neuchatel Gemeinde to 20 per cent in Tessin and Wallis, 24 in Waadt, and 30 in Basel. Figures can not be given.

TRAMWAYS IN SHANGHAI.

NOVEL FEATURES IN THE RUNNING OF THE CARS.

Consul Wilbur Gracey, of Tsingtau, transmits an article from a local newspaper in China relative to the completion of a tramway in Shanghai, from which the following extracts are taken:

The construction of the Shanghai tramways has been practically completed. The cars for the service have all arrived in Shanghai and most of them have been put together. All that is now awaited is the current to supply the motive power for the trams. Two or three weeks must then elapse before the service is inaugurated, as, in order to minimize the risks of accident, the company desires to make the native drivers thoroughly efficient before the trams are allowed to traverse the busy streets of the settlement. The current, it is expected, will be switched on in about a fortnight, and the motor drivers will be trained up and down a convenient thoroughfare for the purpose. Upward of 23 miles of track have been laid, and there remains little to be done but to complete the overhead cable work on two bridges, both of which are nearing completion.

The tram routes have been divided into 11 sections over which the passenger is entitled to travel. The sections on each route are posted in conspicuous places in each car, and printed in English and Chinese. The first-class fare for one section is 2½ cents, for two sections 5 cents, and so on.

The drivers and conductors will be Chinese, but cars will be visited by foreign inspectors at least twice on each journey. The terms of the concession do not allow any exterior disfigurement by advertisements. Each car is divided into two compartments, which seat 12 first and 20 second class passengers, respectively. The seats in the first-class compartment are covered with rattan; those in the second class are of wood.

The cars are lighted by electricity, and notices, in English, French, and Chinese, warn passengers against smoking, spitting, or bringing dogs on board.

LAWS AND ECONOMICS.

COST OF LIVING.

CHINA.

LARGE ADVANCE IN HOUSEHOLD AND GENERAL EXPENSES.

Consul Wilbur T. Gracey, of Tsingtau, China, transmits the following report relative to the increased cost of living in the Far East:

The cost of living in China has increased considerably during the past few years, and the increased price of provisions, rents, and other current expenses are becoming a continual subject for newspaper discussion.

Ten years ago it was possible to secure in Tientsin or Shanghai a good and commodious residence for $35 to $40 gold per month, and a luxurious building for $60, but at the present time the minimum appears to be the latter figure and houses which ten years ago were renting for $35 now bring double that amount. A seven-room house in a row, without garden, rents for about $60, while a detached house with even a small garden can not be obtained for less than $75.

In Tsingtau rentals are somewhat higher, averaging $70 for a seven or eight room house and running to $150 a month for an unpretentious villa (with a small garden) containing probably ten or twelve rooms.

Hongkong rentals are about the same as Shanghai, but vary considerably according to the situation, those at the Peak (a mountain resort above the city) commanding about 50 per cent more than houses situated on the lower level.

SERVANTS' WAGES—PRICE OF COMMODITIES.

Ten years ago it was possible to employ excellent "boys" at $3.50 to $5 gold per month, cooks from $4.50 to $6, and general house coolies for $2.50 or $3. Jinrikisha coolies could be secured for about the same price as house coolies and would work as indoor servants when they were not pulling the jinrikisha. At the present time in Shanghai, Hongkong, and Tientsin wages are $6 to $10 gold per month for boys, while in some cases they demand even higher wages; $6 to $7.50 gold for cooks, $4 to $5 for coolies. Outdoor and indoor servants now will not exchange duties, which necessitates an extra man for those who keep their own jinrikisha.

In Tsingtau wages are still higher than in Shanghai or other places in China, and are 100 to 150 per cent more than in other places in Shantung province. Boys here receive $13 gold a month, cooks $10 to $15, coolies $5 to $6, children's Chinese nurses demand $15 a month and their food, while in other parts of China the latter receive $3.50 to $5 gold per month, or possibly at the highest $8, and procure their own food.

The price of all household commodities in Shanghai, Hongkong, and Tientsin has increased 30 to 40 per cent and meats even higher.

When the price of silver rose some two years ago, the price of tinned goods was advanced, as was also the price of other commodities, but with the decline of silver there is no compensating reduction in the prices of articles of consumption. It is impossible for persons living in America to realize the great variation that is possible in the buying power of money where it is always on a fluctuating basis. A person who six or eight years ago received a salary of $3,000 per annum, equal to about $7,000 in local currency, now finds that his $3,000 only brings him about $5,500 local currency, while the price of everything has increased enormously.

HIGH BUILDING COST.

A Tientsin newspaper, commenting on the excessive cost of building, says:

One of the imperative needs of the community at present is cheaper houses. With a cheap roof over his head the man of limited means may cut his coat to suit his cloth, but a costly house entails expenses over which he finds it difficult to keep control, and there is no question that Tientsin house rents are extremely high. The tendency of landowners has been to build large and expensive houses, quite regardless of the general tendency of the times, and each new building constructed appears to be designed solely with an eye to the future greatness of the port and not to meet immediate needs.

This tendency to build expensive houses is also seen at Shanghai and other China ports. There is continual demand for small houses in Shanghai, with only houses in rows available. There appears to be a good opportunity to build smaller and cheaper villas in the suburbs, which will be easily reached by the new tram system.

The cost of constructing houses in China seems to be excessive, notwithstanding the cheap labor available. Almost all houses are built of brick with tile roofs, and it appears probable that reenforced concrete buildings could be erected in Shanghai much more cheaply, with perhaps more stability, and be better able to withstand the exigencies of the climate.

BRITISH INDIA.

RISE IN PRICES OF PROVISIONS AND RENTS IN CALCUTTA.

Consul-General William H. Michael makes further reference to the rise in prices of foodstuffs and the increased cost of living in Calcutta within the last two years:

The following figures have been furnished for publication by the Royal Exchange of this city: Beef has gone up 33½ and mutton 100 per cent, owing to the price of grain. Flour has advanced 20, butter 25, eggs 15, vegetables 25, coal and coke 28, and milk 20 per cent. These figures are authenticated by the Great Eastern Hotel Company, which not only controls one of the largest hotels in the city, but also conducts a large commercial establishment which includes a grocery and provision department. The correspondence between the Great Eastern Hotel Company and the Royal Exchange elicited the above figures, and also the fact that prices of foodstuffs are advancing and will be necessarily higher by at least 10 per cent within three months. The correspondence also brought out the fact that rents had advanced from 25 to 30 per cent within the same period in question, and that in consequence persons on salaries find themselves unable to save any part of their wage unless it be a large one, and

then only by the strictest economy. The government is considering a plan of building cottages on land belonging to it and renting them to government employees in the civil service at nominal prices in order to help them to meet the increased cost of living, both here and in Simla, the summer capital.

The prices of dry goods and notions, drugs and medicines, furniture and articles used in housekeeping, are all enormously high. For example, a bottle of witch-hazel extract, the regular price of which in the United States is 50 cents, costs 90 cents in Calcutta. A 15-cent American toothbrush costs 33 cents here. A prescription for which an American pharmacy would charge 40 cents, costs 66 cents in Calcutta; this is about the relative cost of drugs and medicines in the two countries. The ratio is about the same in respect to dry goods and notions. Everything is high except labor. The prices of rice, paddy, and food grains have advanced on an average of 30 per cent in the last two years, and the poorer classes find it hard to make their small incomes meet their actual necessities. Those who find employment in the mills, factories, and on the railways are better off than any other class of laborers. The masses of laborers who depend on jobs in the cities and towns, and the field laborers, are the ones who suffer most on account of the rise in the prices of paddy and rice and food grains.

PATENTS AND TRADE-MARKS.

JAPAN.

PROTECTION FOR PATENTS AND TRADE-MARKS OF GOODS TO BE EXHIBITED.

Ambassador Thomas J. O'Brien, of Tokyo, transmits an extract from a Yokohama newspaper containing a reply from Viscount Kaneho, director of the exhibition executive, to a communication from the Yokohama Foreign Board of Trade relative to the protection of inventions, trade-marks, etc., of articles to be exhibited at the world's fair in Japan in 1912. The director writes:

> According to the provisions of the present patent law, models of utility law, designs law, and trade-marks law, when notice is given to the patent office before installing such articles in the exhibition, if application for patent or registration has been made within six months from the day of receipt of said articles at the exhibition, such application shall have the same validity as if it had been filed on the same day as the original notice. From this it will be seen that there will be no danger for any invention installed in the exhibition to be regarded as "publicly known," which on that account will properly secure the rights of the inventor, while with regard to designs, models of utility, and trade-marks, after one has given notice concerning them to the patent office, as aforesaid, he shall enjoy a prior right to them. So that by enforcement of these laws we feel a proper protection for foreign exhibits is already assured. But in order to render the rights of foreign exhibitors more secure, and also to make it easier for them to send articles for exhibition, the Imperial Government has already decided to introduce in the present session of the Diet a bill for that purpose, etc.

AUSTRIA-HUNGARY.

NEW REGULATIONS BETWEEN DUAL MONARCHY AFFECT FOREIGNERS.

The Weekly Bulletin states that the new treaty of commerce entered into between Austria and Hungary on October 8 last year introduces certain new *principles into* the trade-mark regulations of those coun-

tries, especially Hungary. In a recent announcement the Hungarian patent office states that foreign subjects can now register their trade-marks at will either in Hungary or in Austria. It is usually in the interest of the owner to register in both countries at the same time.

The office of registration in Hungary is the chamber of commerce and industry at Budapest. Foreigners are, however, required to designate upon the deposit of a trade-mark the name of the representative duly interested, who must be domiciled in Hungary, failing which the registration of the mark will be refused. In case of litigation the Hungarian authorities are the only competent judges. If an Austrian subject who has deposited his trade-mark in Hungary considers his rights injured by an Austrian mark, he must commence an action before the Hungarian authorities, and need not necessarily appeal to the Austrian authorities if his interests are limited to Hungarian territory. The protection of foreign trade-marks deposited in Hungary is also valid in Bosnia and Herzegovina.

PERU.

REGISTRATION OF TRADE-MARKS AND TRADE NAMES.

Consul-General Samuel M. Taylor, of Callao, calls attention in the following report to the need of registering trade-marks in Peru:

The Peruvian law permits the registration of any trade-mark or trade name not hitherto registered in Peru. The effect of this is that any person can register a mark or name that he has no proprietary interest in, to the exclusion of the real owner, provided he is first in making application. Having registered he may manufacture a spurious article under this mark or name, while the genuine article can not be introduced at all; or he may compel the rightful owner to purchase his registered rights at an excessive price. Registration is an easy matter and should not be neglected.

VITAL STATISTICS.

GERMANY.

CITY POPULATION GROWING AT THE EXPENSE OF THE RURAL.

Consul George Nicolas Ifft contributes from Annaberg the following report on the rapid urban concentration of the German population:

The rapid transformation of Germany from a country where the rural village was for centuries the principal factor, into one in which the city population is very largely in the majority, is causing both economists and statesmen serious thought. To-day attention is frequently called to the necessity of administrative reforms, due to the fact that in many sections of the Empire the rural population is becoming very small, and that practically everywhere the cities contain not only the larger part of the population, but control the bulk of the wealth as well.

At the founding of the German Empire, in 1871, the rural communities (those with less than 2,000 population) contained 64 per cent of the population of the Empire. In 1905 the rural population was only 42½ per cent of the whole. In some sections, such as the Rhine-

land, Westphalia, Oldenburg, and the Kingdom of Saxony, the rural character of the population has nearly disappeared, the per cent of the rural populations in these sections being only 23, 23.5, 24.9, and 28.8 per cent, respectively, of the whole population.

SAXONY HAS THE DENSEST POPULATION.

In the Kingdom of Saxony the city population has increased from 1,265,057 in 1871 to 3,211,408 in 1905, while the rural population, during the same period, has increased only from 1,291,187 to 1,297,193. The strictly farm villages of from 100 to 1,000 population show actual decreases of from 7 to 9 per cent for the same period. Nearly one-third of the population of the Kingdom is found in the five large cities of Dresden, Leipzig, Chemnitz, Plauen, and Zwickau, and more than half the population in the cities of 10,000 or more. In many of the suburbs of the larger cities, once purely village communities, but now swallowed up by the cities, the increase in the population for the five years from 1900 to 1905 was almost phenomenal, averaging from 75 to 80 per cent, and in some instances running as high as 200 per cent.

Saxony is the most densely populated of the German States. In 1871 it had a population of 170.5 per square kilometer (1 square kilometer=0.386 square miles), and this at the taking of the last census in 1905, had increased to 300.7 per square kilometer. The populations of the three large cities, Leipzig, Dresden, and Chemnitz, were, respectively, 8,830, 7,659, and 6,149 per square kilometer.

Next to Saxony, the most densely populated parts of the German Empire are the Rhine Province of Prussia, with 238 inhabitants per square kilometer, and the Principality of Reuss the Elder, with 223 per square kilometer. The average for the entire Empire is 112 per square kilometer.

FRANCE.

DECREASING NUMBER OF CHILDREN IN FRENCH FAMILIES.

The following data, taken by Consul Chapman Coleman, of Roubaix, from the latest official statistics of the population of France, contains some supplementary information to the recent report on the same subject from Consul-General Mason:

According to these statistics the total population of France (in Europe) is 38,350,788. The female sex exceeds the masculine in number, the figures being, respectively, 19,533,899 and 18,816,889. On the other hand, an excess in the number of the unmarried is shown on the masculine side, the respective figures being 9,917,178 and 9,114,356. There are 2,384,897 widows and divorced women, as against 1,005,884 widowers and divorced men.

The number of French families is 9,781,117, of which 1,314,773 are without children; 2,249,337 have but 1 child; 2,018,665 have 2; 1,246,264 have 3; 748,841 have 4; 429,799 have 5; 248,159 have 6; 138,769 have 7; 71,841 have 8; and 33,917 have 9 children. These figures represent, in a rapidly decreasing proportion, the number of families having a larger number of children. Twenty-four families are recorded as possessing 17 and 34 as possessing 18 children.

GOVERNMENT REVENUES.

GERMANY.

INCOME DERIVED FROM GAME LICENSES, GAME, AND GAME PRESERVES.

In submitting the following statistics concerning the community and national income derived from game and game preserves, Consul George Nicolas Ifft, of Annaberg, reports that the laws and ethics of the chase, as well as the best methods of preserving game are important parts of the curriculum of every forestry school and academy in the Empire:

Recent statistics, gathered and compiled from the several German States and other official sources, give an interesting view of the chase as a national asset. There are issued every year in Germany 360,000 annual hunting permits; 180,000 permits for shorter periods, and 60,000 free permits to gamekeepers, foresters, etc. This means that 600,000 men—one in every hundred of the population—go hunting occasionally. While the price of hunting permits in the different German States varies from $1.50 to $6.25, the average is about $3.75. The German devotees of the chase thus pay, in round figures, $1,500,000 annually into the State treasuries for hunting licenses.

The annual "kill" is, approximately, 55,000,000 pounds, of which 44,000,000 pounds are game, with a market value of $6,500,000. Most of this is venison, wild boar, rabbit, grouse, quail, etc. These are large figures, but considered in connection with the fact that the annual consumption of meat by the German people is 7,700,000,000 pounds, the product of the chase becomes an insignificant factor in the meat supply of the nation.

GAME PRESERVE LEASES AND INCIDENTAL INTERESTS.

The money paid for hunting permits and the cash value of the game killed are, however, not the largest item when the chase is viewed from the economic standpoint. The sum annually paid for game preserve leases is still larger. The entire area of the Empire is more or less a game preserve, for the privilege of shooting over some part of which some one is paying an annual rental—it may be in State, city, or community forest preserve, where sometimes larger game is found, or only over the farms which surround every village and offer nothing better than rabbits and quail.

The average price for yearly leases of game preserves is about 8 cents per acre, and the 135,000,000 acres of German area thus bring in from this source more than $10,000,000 per year. The greater part of this sum is paid directly into the community treasuries, and is thence, directly or indirectly, distributed for the benefit of the people interested.

Any estimate of the economic value of the chase would be incomplete which, in addition to the items of direct income mentioned, did not take into account the value of the incidental interests, such as the manufacture of arms and ammunition and other hunting paraphernalia, game bags, hunting outfits, etc., for it is the fashion here to hunt in uniform—i. e., hunting jacket, jaeger hat, leggings, game bag, and belt. Considering these incidentals, it is estimated that the

sons assessed for income tax 542,288 had incomes of less than $714 per year, and only 58,611 persons were found with incomes greater than that amount. Above that figure the classes dwindle rapidly. There were 46,181 persons with incomes from $714 to $2,380; 10,800 with incomes from $2,380 to $11,900; 1,103 with incomes from $11,900 to $23,800; 470 with incomes from $23,800 to $119,000; 39 with incomes from $119,000 to $238,000; 4 with incomes from $238,000 to $476,000; 2 with incomes from $476,000 to $714,000, and 2 with incomes over $714,000 per year.

This means that of the 1,125,000 persons in Berlin who support themselves or themselves and families only 58,611, or less than 5¼ per cent, have incomes of $714 or more per year. About 1,066,000 have less than that amount, and more than half of these even less than $214. per year.

I do not believe that any portion of the income of the man who works for his money often escapes assessment for income tax. The main servant, who earns $5 to $7 per month, has what her board and lodging would amount to charged against her in computing her income, and even the probable "tips" of the waiter are estimated for the same purpose.

INSURANCE IN BADEN.

INCREASE IN THE NUMBER OF PRIVATE INSURANCE COMPANIES.

Consul E. Theophilus Liefeld, of Freiburg, furnishes the following information relative to private insurance companies of various kinds in the Grand Duchy of Baden, as published in a local newspaper:

On January 1, 1908, there were 914 private insurance concerns in the Grand Duchy of Baden, being 82 more than on the same day a year previous. The following statement shows wherein this increase has occurred:

Companies.	1906.	1907.	Companies.	1906.	1907.
Death and annuity	102	131	Insurance concerns for the protection of—Continued.		
Sick benefit with guaranty of payment at death	98	131	Horses	23	24
Sick benefit without guaranty of payment at death	45	60	Animals to be used for slaughter	5	5
Insurance concerns for the protection of—			Fire insurance	2	2
Animals	5	5	Plate-glass insurance	3	3
Cattle only	543	543	Total	832	914
Goats	6	10			

With the exception of one plate glass insurance company, which is a strictly private undertaking, all these companies are based on the mutual insurance plan. Of these, 127 have, up to the present time, complied with the requirements as laid down by the ministry of the interior for mutual insurance companies and have thereby been granted special legal rights and privileges in the transaction of their business.

According to the grand ducal law of June 26, 1890, pertaining to Baden cattle insurance companies, there are at the present time 385 local cattle insurance companies and societies in existence which are not included in the foregoing figures.

MOROCCO.

BRANCHES OF THE BANK OF SPAIN FOR NORTHERN AFRICA.

Consul-General Benjamin H. Ridgely, writing from Barcelona, gives the following account of the initial steps being taken for opening a Spanish bank in Morocco:

The establishment of a branch of the Bank of Spain in the north of Africa has long been desired in the interest of Spanish commerce, and has been petitioned for by merchants, newspapers, members of municipal corporations, and others for some time past. It is now believed that this long-felt want will soon be provided for, at least in part, as an official of the Bank of Spain is now at Tangier to arrange for the installation of a branch of the national bank there, and this will, it is hoped, be the precursor of the establishment of other much-needed branch banks at Ceuta and Melilla.

The installation of this branch will be of great advantage to Spanish interests and will be of utility in preventing the total disappearance of Spanish silver coin, which formerly was of almost exclusive use in North Africa and by which markets were regulated, but which is gradually falling into disuse. It is believed to be of great importance to Spain that her silver money should be employed in Morocco as the principal medium in commercial transactions, as Morocco will probably always present a wide field for its circulation.

As for Ceuta and Melilla, it would probably be a great advantage to possess banks at these centers, as lately an unexpected commercial development has taken place there. Furthermore, in view of the numerous military barracks established there and the works of construction of the three ports which are going on, it is believed that these establishments would meet with success.

BERLIN INCOMES.

GERMAN CAPITAL STATISTICS SHOWING RECEIPTS OF INDIVIDUALS.

Consul George Nicolas Ifft, of Annaberg, states that the official summary of the tax commissioners of the city of Berlin for the year 1906, which has just been published, presents a mass of figures showing conditions of living in the second city of Continental Europe and the fourth largest city in the world. The consul compiles the figures in regard to the income-tax assessments:

The population of Berlin in 1906 is given as 2,040,148, and of this number the tax commissioners, after deducting nontaxable children under 14 years of age, the military, and others by law exempted, found that there were in round figures 1,125,000 persons (heads of households and self-supporting individuals) subject to assessment for income tax. Nearly half this number, however, was found to have incomes of less than $214 per year, and therefore, in Berlin, are exempt from income tax. (The minimum varies, in some German States being as low as $100.)

On the income-tax rolls there were 600,899 names. Of these, 315,610 had incomes of from $214 to $286 per year, and 226,678 had incomes of from $286 to $714 per year. Thus it is seen that of the 600,899 per-

sons assessed for income tax 542,288 had incomes of less than $714 per year, and only 58,611 persons were found with incomes greater than that amount. Above that figure the classes dwindle rapidly. There were 46,181 persons with incomes from $714 to $2,380; 10,800 with incomes from $2,380 to $11,900; 1,103 with incomes from $11,900 to $23,800; 470 with incomes from $23,800 to $119,000; 39 with incomes from $119,000 to $238,000; 4 with incomes from $238,000 to $476,000; 2 with incomes from $476,000 to $714,000, and 2 with incomes over $714,000 per year.

This means that of the 1,125,000 persons in Berlin who support themselves or themselves and families only 58,611, or less than 5¼ per cent, have incomes of $714 or more per year. About 1,066,000 have less than that amount, and more than half of these even less than $214. per year.

I do not believe that any portion of the income of the man who works for his money often escapes assessment for income tax. The main servant, who earns $5 to $7 per month, has what her board and lodging would amount to charged against her in computing her income, and even the probable "tips" of the waiter are estimated for the same purpose.

INSURANCE IN BADEN.

INCREASE IN THE NUMBER OF PRIVATE INSURANCE COMPANIES.

Consul E. Theophilus Liefeld, of Freiburg, furnishes the following information relative to private insurance companies of various kinds in the Grand Duchy of Baden, as published in a local newspaper:

On January 1, 1908, there were 914 private insurance concerns in the Grand Duchy of Baden, being 82 more than on the same day a year previous. The following statement shows wherein this increase has occurred:

Companies.	1906.	1907.	Companies.	1906.	1907.
Death and annuity	102	131	Insurance concerns for the protection of—Continued.		
Sick benefit with guaranty of payment at death	98	131	Horses	23	24
Sick benefit without guaranty of payment at death	45	60	Animals to be used for slaughter	5	5
Insurance concerns for the protection of—			Fire insurance	2	2
Animals	5	5	Plate-glass insurance	3	3
Cattle only	543	543	Total	832	914
Goats	6	10			

With the exception of one plate glass insurance company, which is a strictly private undertaking, all these companies are based on the mutual insurance plan. Of these, 127 have, up to the present time, complied with the requirements as laid down by the ministry of the interior for mutual insurance companies and have thereby been granted special legal rights and privileges in the transaction of their business.

According to the grand ducal law of June 26, 1890, pertaining to Baden cattle insurance companies, there are at the present time 385 local cattle insurance companies and societies in existence which are not included in the foregoing figures.

GOVERNMENT ANNUITIES IN CANADA.

OLD-AGE PENSION PLAN PROPOSED BY THE OTTAWA AUTHORITIES.

Consul-General John G. Foster, of Ottawa, advises that the Canadian Minister of Finance has given notice of the following resolution, which outlines the government scheme of old-age annuities that is to be proposed by the Dominion government:

It is expedient to authorize the sale of government annuities, to the end that habits of thrift be promoted, and that thereby opportunity be given to the people of Canada to provide for old age by means of annuities of not less than $50 nor more than $600 per year, annuities to be purchasable either by paying a single sum or by the payment of a stipulated sum periodically at fixed and definite periods, the governor in council by regulation to fix the rate of interest to be allowed in the computation of values in tables which are to be the basis of such purchases.

Such annuities are to be payable after the annuitant has reached the age of 55 years or has become disabled; the moneys paid in by an annuitant to be repayable, should the annuitant die before the annuity is payable, to the heirs of the annuitant, with 3 per cent interest, compounded yearly; the property and interest of an annuitant in the contract to be unassignable and to be exempt from legal process, unless the contract be entered into and consideration therefor paid with intent to delay, hinder, or defraud creditors. Upon establishing such intent in a court of competent jurisdiction creditors are to have the right to receive, if the annuity has not become payable, the amount paid in, with 3 per cent, simple interest, or, if the annuity has become payable, the present worth of the same.

The moneys received are to go into consolidated revenue fund and the moneys payable to be paid thereout; an account to be known as the government annuities account is to be kept of all moneys received and paid out in connection with annuity contracts, and of the assets and liabilities appertaining to the grant of the annuities, including among the liabilities the present value of the prospective annuities contracted for up to the end of each fiscal year.

POST-CARD INSTRUCTION.

GERMAN EDUCATORS INTRODUCING THEM INTO PUBLIC SCHOOLS.

Consul Frank S. Hannah, in the following report from Magdeburg, tells of the new educational use of pictorial post cards in Germany:

At the recent meeting of the German Geographical Society the idea was advanced for the first time to employ picture postal cards as means of instruction in the schools. The postcard industry has made enormous progress in the last few years, and in the last few months cards have been brought into the market illustrative of natural history, political history, and for use in instruction in the German language, which have met with the hearty approval of professors and teachers of reputation.

The school museum at Breslau has undertaken to form a collection of these cards, and for this purpose has requested the various publishers to forward them samples of their output, that it may be determined to what extent they may be used for purposes of instruction. Further, two teachers in Leipzig have established a central bureau for meritorious post cards of all sorts intended for purposes of instruction, collection, and travel. They have also developed and offer for sale two practical systems for the display and filing of the cards. These gentlemen select and arrange the cards most carefully *according to pedagogical* principles. Such prominent educators as

Harms, Tischendorf, Rudolf Schmidt, and others have indorsed the plan of using illustrated cards as an aid in instruction, and even official bodies, such as the Provincial Schulkollegium in Potsdam, anticipate favorable results from them.

REGULATING GERMAN STORES.

NEW BILL RESTRICTING THE SELLING OUT OF LARGE STOCKS.

Consul-General Richard Guenther sends from Frankfort the following summary of a new measure to be introduced in the German Reichstag restricting "bankrupt" sales of mercantile stocks:

The Federal Government of Germany has submitted to the governments of the individual States the draft of a bill, to be laid before the national legislature, which is to check an abuse in the retail business, the selling-off procedure whereby the purchasing public is deceived and honest business competitors are seriously injured. The new bill purposes to amend the present law against "illicit competition." It fixes (1) a penalty of 5,000 marks ($1,190) fine, or imprisonment up to twelve months, if a person advertises or offers goods for sale as being part of the stock of a bankrupt unless such person has been actually authorized by a receiver in bankruptcy or a legally constituted authority, or (2) when a person or firm, having announced the selling off of the stock in order to close business, adds goods to the stock in order to increase the sales.

The penalty applies even where it is proved that the stock has been increased before the announcement for "selling out" was made in terms like these: "Total closing-out sales on account of death," or "to reduce business," or "on account of lack of storage room," or "to get rid of old stock," and similar devices used to mislead the public.

CARING FOR BRITISH POOR.

INCREASED LIBERALITY SHOWN—PER CAPITA COST OF MAINTENANCE.

Consul Frank W. Mahin writes from Nottingham that increased liberality is being shown in England in the care of the poor. The new workhouse in Nottingham cost $1,250,000. The cost of maintaining paupers in workhouses increased 65 per cent from 1896 to 1907, and of relieving the poor outside of such institutions 55 per cent. The per capita cost to the people of maintaining the poor in England and Wales is now 48 cents.

TEXTILES.

MARKETS AND MILL PRODUCTS.

SCOTLAND.

LARGE DECREASES LAST YEAR IN THE PRICES OF JUTE AND LINEN.

Consul John C. Higgins furnishes the following information concerning the decrease in prices and in output of the jute and linen mills of Dundee in 1907, and the causes thereof:

While in the early part of 1907 the jute-cloth trade of Dundee had reached the highest prices known since the close of the American civil war, there was thereafter a steady decline, on account of slackness of orders, until the value of 40-inch, 10½-ounce, 11-porter burlaps, which had stood at 6.33 cents per yard, fell to 4¾ cents in September. This, however, was partly compensated for by a corresponding fall in the price of yarn. In the late summer a demand from South America sprang up, and for the lighter burlaps a demand from the United States arose, while the continental and the home markets took considerable quantities of the wider makes, so that the manufacturers consequently were enabled to advance prices to a small extent.

Floor-cloth burlaps fell during the year from 7 to 5 cents per yard, and other heavy fabrics were similarly affected. The closing months of the year felt the effects of the money crisis in the United States, not only directly in the falling off of shipments thereto, but indirectly from the stringency caused in the money markets of this and other countries. The burlaps exported from Dundee to the United States during the quarter ended December 31, 1907, amounted to $829,821, a decrease of $680,778, as compared with the exports in the same quarter in 1906. The greater part of this falling off occurred in the last two months of the year, during which instructions were being continually received from the United States to stop shipments until further notice. As a whole, the year closed with none too bright prospects; orders are by no means so plentiful as they were last year, and the general depression is particularly felt in the floor-cloth widths.

BETTER CONDITIONS EXPECTED—FLAX TRADE.

There are now so many wide looms that when a good time comes there is a general rush to manufacture, with the result that in a very short time the supply far exceeds the demand, leading to lowering of prices and curtailment of production. There is, however, a growing outlet for wide burlaps, owing to the greater use of floor cloth and linoleum as floor coverings. The hope is expressed that when money conditions in the United States resume their normal state trade all round will revive.

Prices of flax at the opening of the year were at a comparatively low level, especially looking to the exceptionally good quality produced by the 1906 crop, which was above the average in quantity. Taking advantage of these favorable conditions, spinners began to buy freely, with the result that prices remained firm, with a rising tendency—certain marks which in January stood at $182 per ton rose by July to $190.

The opening months of the year found flax spinners enjoying an excellent trade. They were well booked up with orders running far ahead, which they were able to supply from a plentiful stock of raw material, bought at low prices. So great was the demand that spinners were justified in advancing prices, which by June reached a higher standard than for many years previous.

LINEN INDUSTRY.

The conditions existing in the linen trade at the close of the year 1906 gave rise to much uncertainty for the future. Yarns were at a high price, but the demand for linens did not allow a proportionate return to manufacturers. A still further advance in yarns compelled them to raise prices, and it was only with the greatest reluctance that buyers responded, and even then only purchased in quantities sufficient to meet immediate requirements. During the first half of 1907 manufacturers who, as a rule, held fair stocks of reasonably priced yarn, were able to keep looms going, being aided in doing so by extensive Government orders in the heavier makes, but the last six months of the year business was exceptionally dull, the demand falling away almost entirely, and lessened production was resorted to, either by stoppage of machinery or by means of short time. The American crisis was one of the principal contributing causes to this state of matters. The year was not a profitable one to fabric manufacturers. Those, however, who spun their own yarn fared better, as their stocks of flax were cheap and good. The outlook is not promising, but from the fact that so little has been doing in the past, stocks must be greatly depleted and buying can not be much longer delayed. Yarns give indications of easing and this would aid materially in bringing about an improvement.

EXPORTS TO UNITED STATES.

The value of flax and tow, jute and jute products, and linens declared at Dundee for export to the United States for the past three years is shown in the following statement:

Articles.	1905.	1906.	1907.
Bagging	$370,876	$696,703	$806,762
Bags	14,893	40,317	37,474
Burlaps	4,480,510	5,361,276	4,792,616
Carpeting, jute	21,915	15,273	12,856
Duck, sail	17,561	46,363	38,041
Flax and tow	118,244	72,375	314,196
Jute	56,139	54,632	167,189
Linens	1,353,262	1,158,267	1,217,635
Linoleum		9,888	39,296
Yarn	251,383	416,801	547,686
Total	6,684,783	7,871,895	7,973,751

MANCHURIA.

COTTON GOODS AT DALNY—CONDITIONS AND PROSPECTS OF THE PORT.

From available statistics of imports at Dalny for the twelve months ended June 30, 1907, Consul Roger S. Greene infers that the efforts of the Japanese cotton piece-goods syndicate, formed after the late war, to introduce their goods into Manchuria have met with great success. The consul reviews this trade as follows:

Whereas before the war the importations of Japanese cotton goods into Manchuria were an insignificant factor in the business, during the year ended June 30, 1907, according to statistics collected by the Dalny Commercial Museum, the value of all cotton goods imported at Dalny from Japan was $1,510,422, while those from other ports were valued at $567,229. The values of American, British, Chinese, and other goods included in this list are not stated separately. The value of sheetings and shirtings imported, under which heading come the goods manufactured by the syndicate, was $819,847 from Japan and $450,830 from elsewhere.

As it would seem that the syndicate sent its goods to its agents, the Mitsui Bussan Kaisha, frequently on consignment, to be sold even at some sacrifice in order to introduce the marks, it is not easy to say, from local observation, just how much these figures mean, especially as Dalny is still only a port of entry for cotton goods, and not a place where Chinese buy and sell them in any considerable quantities. Under normal circumstances, even for Japanese cotton goods, Newchwang would appear to be the principal port for carrying on this business, and the principal consumption is probably in the Mukden district. The quantity of merchandise of all kinds coming through Dalny in 1906 and until July, 1907, was abnormally large on account of the fact that until the latter date it entered Manchuria free of duty by this route. After the establishment of the custom-house on July 1, 1907, the imports of cotton goods suddenly fell off, the total amount of cotton textiles imported in the quarter ended September 30 being valued at $77,390, of which four-fifths were from Japan, as compared with $475,454, of which about nine-tenths were from Japan, in the quarter ended June 30, 1907.

SALES OPERATIONS IN STRONG HANDS.

The connection with the Mitsui Bussan Kaisha is of the greatest advantage to the cotton syndicate, as that firm enjoys the highest financial standing, is able to employ experienced men, and, on account of its large and varied business in Manchuria, both in imports and exports, can and does maintain a large number of branch offices which are of the greatest use in such a campaign, besides being in a position in other ways to handle the business in an exceptionally economical and effective manner. Moreover, through the cooperation of the factories in the syndicate, measures are taken to improve and make uniform the grades of the goods turned out, which is of much importance in laying the foundations for future success. It is difficult to tell here what the effect on American goods has been,

as Dalny was never a considerable port of entry for them, and comparison with the past is, therefore, impossible.

The cotton-goods trade at Dalny is almost entirely retail, and even this is insignificant on account of the small population of this region and the fact that a large proportion of the Chinese here are coolies from other provinces, who bring with them what clothes they need, and have little occasion to buy others before they return home with their savings. As a matter of fact, the sheetings and shirtings in the Chinese stores here are practically all from Shanghai, and mostly of American and English origin. On account of the small scale on which the business is carried on here it would be unsafe to base on these facts any sweeping conclusions as to the situation in the rest of Manchuria.

In view of the energetic and thorough manner in which the Japanese manufacturers are working for the control of this market and the advantage which proximity gives them, it is evident that American dealers should display more energy if they wish to maintain a prominent commercial position in Manchuria.

ASIATIC TURKEY.

MARKET OPENING FOR READY-MADE CLOTHING IN ASIA MINOR.

Consul E. L. Harris, of Smyrna, advises that if American establishments which manufacture ready-made clothing could furnish that Turkish market with men's suits averaging about $15 in price wholesale, he feels certain a good trade could be done. The consul continues:

The ready-made clothes trade has greatly developed in this part of Turkey in recent years. This has not been confined to the coast cities alone, but has been especially noticeable in the interior towns, and in the country districts, where the population is rapidly dropping the native costume. Smyrna is the center of the trade, and not only supplies the interior of the country, but the islands of the archipelago as well.

In Smyrna there are five large establishments, and a number of smaller ones, which sell ready-made clothing. If American dealers interested in this field will send prices for ready-made men's and boys' suits, as well as ladies' cloaks, and rain coats for both men and women, to this consulate, I shall take pleasure in bringing them to the notice of the trade in Smyrna.

IRELAND.

BELFAST LINEN MILLS CURTAIL PRODUCTION—HIGH YARN COST.

Consul Samuel S. Knabenshue makes the following supplemental report on the Irish linen industry. He writes from Belfast under date of February 19:

The 20 per cent reduction in the hours of employment in both the spinning and weaving linen mills, which went into operation in November last, has since been followed by a further reduction. At present the usual time—fifty-seven hours per week—is reduced by 33⅓

per cent in the spinning mills and 20 per cent in the power-loom factories (weaving); but the latter have a great many looms stopped, and it is estimated that the reduction in their output is between 50 and 60 per cent.

The depression has not produced much decline in prices as yet. The spinners have large contracts for yarns yet unfilled, but they refrain from aggravating the situation by compelling the weaving firms to take yarns faster than they can use them. On the other hand, the latter do not wish to manufacture more than enables them to supply current orders. The prices of yarns are too high to allow them to make goods for stock, as they would do if yarns were cheap. They have large quantities of yarns contracted for at the present high prices, and naturally do not wish to see the prices of manufactured goods decline so long as this condition exists.

Although the demand for linens is much below the average, it has by no means ceased, and any increase therein will cause larger quantities of goods to be made. The report of the Flax Supply Association for January shows for that month a decrease in the total yardage shipped of 7.4 per cent, with an increase of 4.3 per cent in value. All manufacturers express their expectation of a fairly good spring trade.

GERMANY.

LARGE DIVIDENDS DECLARED BY A COTTON MILL AT BAMBERG.

Consul William Bardel, in advising that a cotton spinning and weaving mill at the German city of Bamberg is declaring an annual dividend of 27½ per cent on its capital stock, gives the following account of this mill's prosperity:

This concern, which now consumes annually about 25,000 bales of American cotton, is thereby the best customer of the United States in this consular district. The preliminary annual report by the board of directors of the mills shows how, by judicious and timely investment in the raw material, large profits were gained in a rising market, so that a fair profit would have been realized had the demand for yarns and finished textiles, mostly plain sheetings and shirtings, been less pronounced than it proved to be during the past year. Owing to the great scarcity of labor in the textile branches at times this brisk demand had to be met by extraordinary efforts, but it was met successfully. Even now this factory has orders ahead for yarns and textiles to keep it going in full force until next October, and, inasmuch as they are fully covered in raw material at comparatively low figures, the prospects for another successful year are bright.

The net profit of the Bamberg cotton mills for the year 1907 was $366,768. Of this amount the directors propose to apply $83,507 for workingmen's pensions, for extraordinary deduction for wear and tear of machinery and other matters, and after declaring a dividend of 27½ per cent on all their stock, amounting to $856,000, making the sum of $235,620, they will put the remainder, viz, $47,641 to the reserve fund. During the last 22 years this concern has not lost one cent in bad accounts.

JUTE TRADE CONDITIONS.

BRITISH INDIA.

CALCUTTA SHIPPERS' LOSSES—SECURING UNIFORM SHIPPING BALES.

Consul-General William H. Michael sends from Calcutta the following information concerning the jute market, a new jute press, and the standardizing of jute bales:

The Calcutta trade in jute fabrics and hides and skins has been seriously affected by the monetary conditions in the United States, and a number of extensive shippers have made their losses known to this consulate. The conditions reported before the holidays in London and Dundee are about the same in kind in Calcutta. The reports from those points agree that the position in the United States is causing some anxiety. Several of those who regularly export jute fabrics are being put to no end of inconvenience. Further orders are being delayed or canceled, and large parts of shipments already made are not being remitted for. The difficulty resulting from the general demand to have payment in gold is being felt on every hand.

A jute press that will press a bale of jute containing 143 pounds has been invented, and is in use in India, that is rapidly doing away with the "drum method" of packing for shipment. The machine costs only $165, and will soon pay for itself by economy of loading and unloading and in saving of freight and preventing loss by pilfering from the loose drums. One broker sent out 188 of the new presses to jute districts from Calcutta.

THE CROP AND EXPORTS.

The table below, giving the number of bales of jute exported from India during the last six months of 1907 (2,566,306), shows that the final forecast of the Government for the current season (July 1, 1907, to July 1, 1908) has not been realized, and that, instead of an increase, the amount of the product has fallen considerably short of the three previous years:

Season.	First six months.	Last six months.	Total.
1904-5	2,611,112	938,786	3,549,898
1905-6	2,709,466	1,416,309	4,125,775
1906-7	2,944,063	1,615,957	4,560,020
1907-8	2,566,306		

According to a Calcutta journal, the statistics for the six months ended December 31, 1907, show that there was a movement at Calcutta and Chittagong of 6,192,743 bales, 2,566,306 of which were exported, 2,826,437 were taken by local mills, 500,000 were allowed for country consumption, and 300,000 were estimated for stocks in bazaar, press houses, and in ships' holds.

The local mills received into their godowns during the first six months of the season almost 75 per cent of their estimated consumption for twelve months, and as immense piles of bales have been purchased and are stored on mill account upcountry, the mills are comfortably off on the average and are well within sight of their total requirements for the season. Foreign customers require 4,200,000

bales for a year's consumption. Against this they had a good stock with which to commence the season, and they are apparently in no hurry to rush the jute home. America has received upward of 350,000 out of the 600,000 bales she usually requires, and may not require so much this season, owing to the contemplated abandonment of heavy bagging for the packing of cotton bales.

The United Kingdom has already received 1,350,000 bales, all that is required for the year's consumption, leaving the stock at the beginning of the season intact. But the Continent requires another 1,000,000 bales during the second six months of the season, and there is no fear but that that quantity will be forthcoming. Altogether there is in view for the first half of the season 6,200,000 bales, leaving (according to the Government forecast) 3,600,000 to be forthcoming during the following six months. A realization of this figure will give a surplus of 1,000,000 bales over actual consumption, which added to the surplus of last year, will give a tidy stock of 2,000,000 bales with which to commence the next season. So it is evident that whatever course prices may take there will be no lack of the raw material.

STANDARD OF JUTE BALES.

A large and representative meeting of the Calcutta Baled Jute Association was held January 17, 1908, to consider the question of changing the baled-jute contract so as to bring the quality guaranty more in line with the same clause in the London contract. For some years, it appears, the quality of standard marks here has been steadily deteriorating, owing to the fact that they have only been guaranteed up to the standard of last year's baling. London, on the other hand, expects to get the same standards as were customary five years ago. The result of this has been many arbitrators and many allowances and consequently heavy losses to the Calcutta shipper, who has been forced to buy on Calcutta standard and sell on the higher London standard. Several attempts have been made to mend matters, but until this meeting the attempts were unsuccessful. Various proposals were made, but after some discussion it was decided that if, out of 5 bales examined, there are more than 2½ per cent of cuttings shippers will have the right to reject the parcels. This applies to all grades higher than heart marks, effective after March 1.

BRAZIL.

JUTE BAG MANUFACTURE IN NATIONAL ESTABLISHMENTS A MONOPOLY.

Deputy Consul-General Joseph J. Slechta, of Rio de Janeiro, furnishes the following report on the conditions under which the monopoly of jute bag manufacture is profitably carried on in Brazil:

The bags used to hold Brazil's immense coffee crops are manufactured by national industrial establishments. When it is remembered that last year Brazil needed over 20,000,000 jute bags to hold the year's coffee production, and that each bag costs the shippers a trifle over 18 cents, it is seen that the business of manufacturing coffee bags takes on very considerable proportions, amounting last year to nearly $4,000,000. Bags made of the same material are used also for rice, beans, and other agricultural products of Brazil. The greater part of these bags are manufactured by five large establishments which

have hitherto been more or less independent of each other. Two of the largest of the factories are owned by an American who is also the sole owner of large cotton mills. Through the efforts of this mill-owner all five of the large mills producing bags for coffee and other purposes have been brought under one management.

Only a few weeks have elapsed since the completion of the organization, but already the prices have been raised about one-third of a cent per bag.

Bags are manufactured from the raw jute, nearly all of which is imported from British countries, the imports therefrom in 1906 amounting to about $2,500,000. Of course the United Kingdom could produce the finished article much more cheaply than it can be manufactured here, but the item of duties is a factor to be reckoned with on that score. The duty on jute bags is 800 reis per kilo (2.2 pounds) which becomes in actual payment, including proportion payable in gold, about 35 cents. The average weight of bags used for coffee is approximately 440 grams, or very nearly one pound, which means about 16 cents per bag in customs charges, and since the manufacturers' price averages a little more than 18 cents per bag, the duty amounts to 88 per cent, as based on the price here, while if based on the manufacturers' price in England it amounts to a much higher rate.

TEXTILE INVENTIONS.

ENGLAND.

NEW SPOT-VEILING MACHINE WILL SAVE MUCH HANDWORK.

Consul Frank W. Mahin, of Nottingham, advises that after eight years' experimenting, at a heavy expense and against many discouragements, a machine has been perfected by a mechanic and a lace manufacturer of that English city, for spotting veilings with chenille, concerning which he says:

Hitherto this has been done by hand. The machine, it is claimed, will do in a few minutes what would require months of handwork. The chenille used in spotting is made in lengths, and is cut off as each spot is inserted into the veiling. Obviously, that is a slow and laborious hand process. In a frame over the new machine are placed as many lengths of chenille as are required for the width of the veiling. The chenille passes down into the machine, which inserts and cuts it automatically as the veiling passes through the machine. The machine is adjustable so that the spots may be in rows of absolute uniformity, or by an automatic shifting device the spots may be placed in varying rows.

The initial difficulty, which took several years of experiment to overcome, was that many of the spots fell off the veiling, though apparently fast when set in by the machine. This defect was removed by gradually perfecting the operators acting upon the chenille. To accomplish this, it was necessary for the inventors to set up a shop and make their own machines, of which they have completed ten. Another equally serious trouble was the breaking of the net by the inserting of the chenille. This was overcome after long and patient effort. The delicate working of the machine in this operation has

been brought to a perfection like that of a steam hammer, whose momentum may be graded from a force sufficient to crush a hard metal to a blow so slight as scarcely to dull the point of a pin.

ADAPTABLE TO JACQUARD WORK.

A final triumph has been gained in a machine with jacquard appliances, which can spot veilings in any design suitable to the gage of the machine. The designs are, of course, quickly changeable, five minutes sufficing to substitute one set of cards for another.

All the present machines are narrow, and comparatively small, yet the production of one of them, on a close set-out, is stated to be nearly 200,000 spots an hour. As such machines may be widened almost indefinitely, their possible achievements are beyond conception. It would seem that they might revolutionize the entire industry of spotting fabrics of every kind. Stronger chenille for thicker substances than veiling could probably be used, applicable to curtains, carpets, tapestries, tablecloths, etc., and the machine may also take an important place in the lace-making industry.

The lengths of the chenille being limited, must be united by knots or otherwise, and these joints give trouble in passing through the machine. To overcome this the inventors are now building a machine of their own device to make their own chenille. When completed, it will remove the only apparent defect in the present work of the spotting machine.

MARKETING THE PRODUCT—SAFEGUARDING THE RESULTS.

The produce of the machines is now being marketed, but the quantity will be small and scarcely appreciable till more and larger machines are made. Then the immediate probable effect will be to greatly reduce the price of veils spotted with chenille. Veils and other articles of spotted net are an entirely different product. The spots on these are made from the same thread and in the same weaving as the net. The machine halts at fixed intervals, and makes a certain number of motions which create the spot, and then resumes the weaving movement.

Patents on the spotting machine have been taken out in the United States, France, Germany, and other foreign countries. The inventors have received liberal offers for their patents, among them such as would take the machines entirely away from Nottingham, but all have been declined. They believe they have an invention of too great value to part with on any conceivable terms that might be offered. In the past new machines were allowed to go from this place and have built up great industries on the Continent, to the serious loss of Nottingham, and it is now the fixed purpose of the town never again to permit a like occurrence.

BRITISH INDIA.

IMPROVED HAND-WEAVING MACHINES—METHODS OF OPERATION.

Consul-General William H. Michael, of Calcutta, sends the following account of the recent contest in India for the production of the best improved hand loom:

The Indian Industrial Conference awarded the prize of $42 offered for the best factory hand loom to an inventor of Ahmednagar, and the *same money prize* was awarded for the best cottage loom to what

was termed a "poor man's loom." The latter sells for $8 and $10, according to size. The former loom is worked by the foot. The weaver by pressing his feet straight down operates the loom, which has no wheels to turn the shaft; a leather band connected with the end of the foot levers goes round the shaft and turns it round alternately backwards and forwards, which works the sheds as well as the sley. A curving double spring with ball bearings controls the speed. This loom will do more work with less labor than any other hand loom. The "poor man's loom" will do double the work of the ordinary cottage loom now in use. These new hand looms will doubtless increase the consumption of cotton in India by the hand loom, which is stated by a Government official to be about 750,000 bales per annum, against about 1,945,000 bales by the mills.

HAND-WEAVING FACTORIES.

Great effort is being made by Indians interested in Swadeshi to find a hand loom that will do more and better work. The two superior looms shown at the fair recently at Madras causes the belief that a marked advance has been made in hand looms. The first year's working of the special weaving factory established by the Madras Government at Salem with the view of introducing improved hand looms, and to demonstrate the superior efficiency of the factory system would appear to have met with several difficulties.

One satisfactory result of the factory has, however, been that attention has been attracted all over the country, and numerous private hand-weaving factories have been started, which are operating the flyshuttle loom. Experiments have been made at the factory with every type of loom with the result that a fair number of the most satisfactory looms were sold through the factory or sent out on loan for trial during the official year 1906–07.

AUSTRALIAN WOOL EXPORTS.

CONSIDERABLE DECREASE IN SHIPMENTS DURING PAST SEASON.

Consul-General John P. Bray, of Melbourne, reports that the wool exports of Australia from July 1, 1907, to January 31, 1908, show a decrease of 72,463 bales when compared with the corresponding period of last season, as will be seen by the following shipments:

State.	1906–7.	1907–8.	Decrease (−) or increase (+).
	Bales.	*Bales.*	*Bales.*
Victoria	389,957	354,257	−35,700
New South Wales	575,110	511,666	−63,444
Queensland	91,018	108,021	+17,003
South Australia	133,150	145,647	+12,497
West Australia	36,009	44,285	+ 8,276
Tasmania	13,615	12,683	− 932
Total Australia	1,238,859	1,176,559	−62,300
New Zealand	232,061	221,898	−10,163
Total Australasia	1,470,920	1,398,457	−72,463

Considerable quantities of wool grown in some States are shipped from others; therefore the above does not show actual production, but total oversea shipments from each State.

MINES AND MINERALS.

THE WORLD'S OUTPUT.

BRITISH INDIA.

STATISTICS SHOWING VALUE OF MINERAL PRODUCTION FOR TWO YEARS

Consul E. Haldeman Dennison, of Bombay, furnishes the following table published by the government of India, giving the total value of minerals for which returns of production are available for the years 1905 and 1906, with a review of mining operations:

Minerals.	1905.	1906.	Minerals.	1905.	1906.
Gold	$12,084,855	$11,151,420	Jadestone	$227,870	$322,165
Coal	7,097,215	9,560,210	Graphite	84,460	50,045
Petroleum	3,021,315	2,871,190	Iron ore	69,135	56,705
Salt	2,206,960	2,104,505	Tin ore	49,585	68,995
Saltpeter	1,178,615	1,352,735	Chromite	17,410	25,940
Manganese ore	1,241,545	2,176,340	Diamonds	12,870	25,800
Mica	710,040	1,297,720	Magnesite	2,750	2,440
Ruby, sapphire, and spinel	441,700	484,335	Amber	4,725	3,545

The output of coal for 1906 rose from 8,417,739 statute tons in 1905 to 9,783,250 tons in 1906, an increase of 16.2 per cent. On account of the higher prices maintained throughout the year, there was a still greater proportionate increase in reported spot value. The external demand for Indian coal has increased with the general rise in prices, and the reduction of Japanese supplies has resulted in an increased export to Singapore. The total quantity exported during 1906 for the first time in twelve months exceeded a million tons.

Imports of coal are still small, though they increased slightly from 188,677 tons in 1905 to 215,712 tons in 1906. The consumption of Indian coals on railways was 2,878,281 tons in 1906, which was 29.4 per cent of the total production, as against an average of 29.8 per cent for the previous five years.

The total consumption of coal increased by 1,161,850 tons, but, on account of the great increase in export, the amount of Indian coal consumed in the country increased at a slightly lower rate than the production. The average number of workers at Indian coal mines in 1906 was 99,138, and the average output per person employed was 98.68 tons, as against 93.5 tons in 1905 and 88.6 tons in 1904.

DIAMONDS, GOLD, JADEITE, AND GRAPHITE.

The diamonds obtained in the central India States of Panna, Charkhari, and Ajaigarh during 1906 were valued at $25,800, which is a marked improvement on the values reported for previous years. The daily average number of workers is returned as 2,051 for the whole diamond field during 1906, as against 1,890 reported for 1905.

Over 95 per cent of the gold produced in India comes from the native State of Mysore; other districts contributing small quantities, in the order named are Hyderabad, Burma, Dharwan in the Bombay Presidency, Punjab, and the United Provinces. The year 1906 marks the first interruption in the increase of gold production in Mysore.

The total production of crude graphite in 1906 was returned as 2,600 tons, valued at $50,045, against 2,324 tons, valued at $84,450, in 1905.

Jadeite stone comes from Upper Burma, and showed a small increase in both quantity and value over 1905. The returns for 1906 showed a production of 2,566 hundredweight, valued at $322,165. The average number of workmen employed was 1,038.

MAGNESITE, MANGANESE AND IRON ORES, AND MICA.

The amount of magnesite raised in the Chalk Hills, near Salem, in 1906 was 1,832 tons, against 2,063 tons in 1905. The miners numbered 87 for 1906.

The production of iron ore during 1906 was only 74,106 tons, against 102,579 tons in 1905. The output is dominated by the quantity raised for the Barakar iron works, which is the only institution smelting on European lines. Practically all the iron ore of India is supplied by the province of Bengal.

The most conspicuous increase in production during the year 1906 was in manganese ore. The total returned was 495,730 tons, against 253,896 tons in 1905 and only 150,297 tons in 1904. The total returned for 1906 is probably slightly below the actual, as no production was reported from two of the States in which prospecting operations have been carried on actively. The following are the details of the production of manganese ore for 1905 and 1906:

District.	1905.	1906.
	Statute tons.	*Statute tons.*
Bombay	----------	7,517
Central India	30,251	50,074
Central provinces	159,950	320,759
Madras	63,695	117,380
Total	253,896	495,730

The labor returns for 1905 show a daily average at manganese ore quarries of 6,811, while in 1906 the total rose to 12,607, exclusive of the workmen employed in Sundur and Mysore.

The total weight of mica produced in 1906 was 54,193 hundredweight, valued at $1,297,720, against 25,835 hundredweight, valued at $710,040, in 1905.

PETROLEUM OUTPUT.

There was a slight drop in the production of petroleum for 1906 as compared with 1905, the statistics being as follows:

District.	1905.	1906.
	Gallons.	*Gallons.*
Burma	142,063,846	137,654,261
Eastern Bengal and Assam	2,733,110	2,897,990
Punjab	1,488	871
Total	144,798,444	140,553,122

The local value is estimated at about 2 cents per gallon of crude oil.

The agreement made between the leading company in Burma and the producers in the Dutch East Indies has tended to reduce the figures both for the import of foreign kerosene and for the export of Burma oil, although the figures for the former are largely affected by the failure of Russian supplies.

RUBIES, SAPPHIRES, SPINEL, SALT, SALTPETER, AND TIN.

The output of ruby, sapphire, and spinel, reported by the Burma Ruby Mines Company during the year ended February 28, 1907, was reported as 326,855 carats, valued at $477,700, against a value of $441,700 returned for the previous year. Of the total value, $465,115 is due to the rubies obtained. The average number of workers during 1906 was 2,367.

There was an unimportant reduction in the quantity of salt produced, the total for 1906 being 1,225,465 tons, against 1,291,137 tons produced in 1905.

The value of the saltpeter (bluestone) industry is gaged most uniformly by the figures for exports. The returns for the past five years indicate a gradual rise in the average value, but the industry shows no signs of real expansion. The following are the export figures:

	Hundredweight.	Value.
1905	313,122	$1,178,615
1906	347,251	1,352,735

The local importance of the saltpeter industry is shown by the returns for labor in Behar, where most of the saltpeter is obtained. The returns for 1906 show that 50,469 workers were employed in this industry.

Tin ore is produced in South Burma, and the output increased from 1,495 hundredweights, valued at $49,585 in 1905, to 1,919 hundredweights, valued at $68,995 in 1906. The average number employed at the tin mines was 141 in 1906.

DISCOVERY OF WOLFRAMITE BY AN AMERICAN ENGINEER.

Consul Dennison in another report tells of the discovery of wolframite in British India:

Until recent time the mineral wealth of India, with the exception of gold, was an unknown factor, but the numerous mineral finds which have been made in the last few years have revealed vast possibilities of wealth. In no part of the country are the prospects brighter than in the Central Provinces. The development of the manganese industry has perhaps been the most striking feature of the past decade. But important as the discovery of manganese is, another discovery may prove to be more important still.

An American mining engineer some time ago obtained a concession of part of the village of Agargaon with a view to mining manganese. His employees while digging in a band of mica schist rock that traverses the village discovered a number of lumps of a heavy mineral which, on being examined by the geological survey at Calcutta,

were found to consist of wolframite. The mica schist rock contains a considerable number of quartz stringers, and it is in these that the wolframite is found. The wolframite differs in appearance and constitution from the best-known specimens, but it yields on an analysis no less than 64.5 per cent of tungstic acid.

BRITISH SOUTH AFRICA.

GREAT YIELD OF GOLD FOR PAST YEAR—PROFITS AND PROSPECTS.

Consul John H. Snodgrass, of Pretoria, has prepared the following review of the gold and other mining operations in the Transvaal last year:

The mines of the Transvaal in 1907 yielded gold to the value of $136,750,000 which, with the exception of about $5,000,000, was secured along the Reef upon which is situated the city of Johannesburg. This is an advance of about $13,750,000 over the previous year, which is considered a handsome showing, though considerably below the ratio of increase noted in former years.

There was a similarity between last year and the years 1905 and 1906, which together may be characterized as a period of progress and disappointment—progress solid and convincing in the wonderful gold industry itself, disappointing in that little fresh capital has been available for the prosecution of new mining ventures, and that prospecting in outside districts has failed to disclose anything of real permanence and genuine value. This inability to discover rich new precious mineral territory during the past five years is a discouraging feature of the Transvaal's history, for during that time the great Premier Diamond Mine has been the only one found that is recognized as valuable. The diminution in the yield per load and the severe fall in the price of diamonds seriously affect the profits, and consequently the revenues, from the 60 per cent accruing to the government, have seriously fallen off.

LABOR PROBLEMS AND DIVIDENDS.

The crucial feature of the industrial year is seen in the decision of the government to discontinue Chinese indentured labor, which has been a great factor in the output of the mines and in bringing up the profits to a standard of $50,000,000 per year. Whether the industry will be as well situated when 30,000 or 40,000 coolies are repatriated is doubtful. However, the industry seems to be developing into the way of breaking rock more and more by machine drills.

The aggregate dividends of the Rand for 1907 approximate $35,000,000. By including the three dividend payers of the outside districts, in the Transvaal, the total dividends of the gold-mining industry in this colony paid out at the end of December, 1907, amounted to $35,658,040.

No less than 45 companies find a place in the dividend schedules as compared with an average of 65 Rand concerns producing during the past year. The aggregate issued capital upon which dividends are being paid is no less than the round sum of $120,000,000. Compared with 1906, $13,500,000 more capital is in receipt of dividends, and it is interesting to note how this has been gradually increased;

in 1906, $115,650,000 issued capital was earning dividends; in 1905, $108,500,000; in 1904, $82,650,000, and in 1903, $60,845,000. It may be stated in general terms that the issued capital of the Rand gold mines is $375,000,000, of which one-third represents mines not working.

RATIO OF PROFITS—MINING NOTES.

On the issued capital (distinct from the market valuation of the shares of the companies, which is quite different) the dividends work out at 27.4 per cent compared with 24 per cent in 1906 and 21 per cent in 1905. The share prices during 1907 fell seriously, but even allowing for the dividends paid in the interim, which must rationally be deducted from the price of the shares, the yield on Rand stocks of the highest class is somewhat better to-day than ever before.

The profits made by the Rand companies in 1907 totaled about $50,000,000. On this basis 70 per cent of the profits declared by the companies is distributed as dividends. The financial corporations of the Rand show an aggregate of $7,975,000, as compared with $6,520,500 for the previous year. Collieries increased their dividends only $175,000 over the $617,590 for the previous year. There is no variation whatever in the dividend showing of the gold mines in outside districts.

The mineral output of southern Rhodesia for the year 1907 shows an all-round increase as compared with 1906. The gold output for the year amounts to $11,157,155, an increase of $121,320; silver, $83,610, an increase of $20,000; lead, $57,975; copper, $33,230; tungsten, $27,235; chrome, $115,655; antimony, $9,625; coal, $278,785; diamonds and precious stones, $144,920. The value for the whole mineral output for the year was $11,908,315. At the end of the year there were 154 producing gold mines.

For the first nine months of 1907 the Transvaal's output of precious and base minerals was valued at $114,912,720, the share of gold being $101,273,015; diamonds, $9,690,515; coal, $2,907,750; silver, $338,615; other minerals, $704,825.

It is estimated by leading mining experts at Johannesburg that the amount of gold still to be mined along the Rand Reef is valued at $5,000,000,000.

FEDERATED MALAY STATES.

SLIGHT DECREASE SHOWN IN OUTPUT OF TIN LAST YEAR.

Consul-General Thornwell Haynes reports from Singapore that the output of tin of the four States of Perak, Selangor, Negri Sembilan, and Pehang, which constitute the Federated Malay States, and produce 60 per cent of the world's production of tin, was, in tons and duty value, for 1906 and 1907, as follows:

	Tin.	Tin ore.	Total.	Duty value.
	Tons.	*Tons.*	*Tons.*	
1906	18,259	30,358	48,617	$5,670,791
1907	13,938	34,494	48,432	5,310,646

BITUMEN IN TURKEY.

CROWN CONCESSION FOR WORKING TO BE GIVEN THE HIGHEST BIDDER.

In reporting that the bitumen deposits in Judea belonging to the "civil list" of the Sultan of Turkey are shortly to be leased to the highest bidder, Consul-General Edward H. Ozmun, of Constantinople, thus describes these resources of that part of the Ottoman Empire:

Bitumen exists principally in the Province of Aleppo and Syria. The caza of Saida contains deposits in the vicinity of Ain-Tadjoura. These deposits are also to be found in the villages of Ain-ebel, Aidib, and Hereika, at various places in the Sandjak of Acre (St. Jean d'Acre), near Antioch, and at Latakia. In Syria the bituminous pits of Hasbeya are the most noted; at Sohmar and Ain-el-Tin these deposits are no longer exploited.

In 1897 the "civil list" leased to a Beirut firm the right to work these bitumen deposits on a basis of one-third of the product mined to the concessionaire and two-thirds to the Government. In 1895 the total quantity mined amounted to 600 tons, of a total value of about $70,000. The average amount exported from Saida amounts to 370 tons. From Beirut there were exported the following number of boxes of 100 kilos (kilo=2⅕ pounds) each: In 1893, 396 valued at $4,030; in 1894, 2,000 at $20,196; in 1895, 5,200 at $45,360; and in 1896, 6,100 at $56,448.

The bitumen from Judea is generally in large pieces mixed with earthy substances—limestone, clay, and sand. It is worth as much as $180 per ton. It rarely contains oxygen, resembling somewhat ozocerite, but it always contains sulphur.

Judean bitumen floats in pieces of varying size on the Dead Sea, and is washed up principally on the western shore, where the Arabs collect it. The bitumen rises from the depths and forms islets, which were remarked in ancient times and described by Strabo. The local earthquakes have the effect of augmenting these deposits. In the year 1834, after a severe shock of earthquake, a mass of 20 tons was thrown up on the southern coast; in 1837, when a sharp shock was felt all over Syria, a mass of 15 tons came to the surface.

STRATUM OF BITUMEN OF JUDEA AND ASPHALT OF THE DEAD SEA.

The bituminous deposits of Judea, from the southern extremity of the Dead Sea to the source of the River Jordan, lie in a remarkable manner along an axis parallel to that of the basin. These consist of either brecciated bituminous veins surrounded by limestone or in impregnated asphalt, between which no distinction will be made in the following details:

The deposits along the western coast of the Dead Sea to the source of the River Jordan are the following: Waddy Sebeh, Waddy Mayawat, Nebi Musa, and Hasbeya at the northern extremity of the River Jordan. Other deposits are known to exist principally around Tiberius, but they have not been the subject of any special study.

The impregnations are found in Cretaceous surroundings. At Nebi Musa and Hasbeya these are white and soft and contain numer-

ous fossils such as pecten and spines of echinoderm, remains of fishes. The deposits are generally well defined and of limited extent. Impregnation ceases gradually as the limestone becomes more argillaceous. The impregnated limestone, rich in fossils, is either a brownish color, as at Hasbeya, or of a rich black, as at Nebi Musa.

When exposed to the sun they lose their superficial color, while on the surface they are only distinguishable by a faint bluish color of the surrounding chalky clay, and at times are passed unnoticed. The limestone in the vicinity of the bituminous deposits is often marked with numerous veins of gypsum and also contains a slight proportion of chloride of sodium. Below is the analysis of limestone taken from a tufa subjacent to a layer of bituminous limestone of Nebi Musa:

CaO, CO_2	92.53	Insoluble	1.08
MnO, CO_2	1.86	Water and loss	2.14
Fe_2O_3 and Al_2O_3	0.57		
NaCl	1.82	Total	100.00

DETAILS OF THE VARIOUS DEPOSITS.

The deposit of Waddy Sebeh, of minor importance, is composed of dolomitic limestone impregnated with bitumen. The person who rediscovered it compares it to the ancient description by Strabo of the rocks exuding pitch. The stream of Waddy Sebeh has forced itself a passage across this calcareous region, and one often finds, down the river and in the bed of the stream, fragments of asphalt, torn away, no doubt, by the waters from the calcareo-bituminous regions it traverses.

The deposits of Waddy Mahawat are situated not far from the saline deposits of Djebel Usdom and at about 300 meters (meter = 3.28 feet) from the mouth of the Waddy Mahawat stream. The cretaceous limestone is here strongly impregnated with bitumen. It oozes from the fissures and at times takes the form of real stalactites. The alluvium attached to this limestone is also impregnated with bitumen (and forms a bituminous pudding stone). The stream of Waddy Mahawat traverses this deposit and carries with it fragments of this bituminous conglomerate.

The deposit of Nebi Musa is the most extensive of all. It shows itself on the surface in large bluish patches, which expose a bituminous limestone of a beautiful black when cracked. The analysis of two different samples of this calcareo-bituminous deposit, but not taken from the same layers, is given:

Constituents.	No. 1.	No. 2.
CaO, CO_2	68.73	82.10
MgO, CO_2	.27	0.00
Terreous residue	6.00	3.90
Bitumen	25.00	13.55
Total	100.00	99.55

This limestone, it will be seen, is rich in bitumen, burns with the greatest facility, and in fact the Arabs use it for replenishing their fires.

The deposit of Hasbeya, situated at the northern extremity of the Jordan, is one of a series of deposits, absolutely analogous to that of Nebi Musa, which stretch along the Anti-Lebanon.

The bituminous limestone of Hasbeya is brown and not as rich as that of Nebi Musa. At the time of the Egyptian conquest it was the seat of regular workings, and one can still see the remains of some twenty pits.

The following analyses are those (1) of bituminous limestone, (2) of limestone where the impregnation ceases, (3) of limestone at a certain distance from the limit of impregnation:

Constituents.	(1)	(2)	(3)
Bitumen	10.00	10.00	0.00
Insoluble matter	6.00	0.00	0.00
CaO, CO_2	77.36	18.40	5.50
MnO, CO_2	.88	.06	0.00
Al_2O_3, Fe_2O_3	5.68	1.20	17.50
SiO_2	0.00	70.00	75.00
Total	99.92	99.66	98.00

One may here note the impoverishing influence of silica on the extent of the impregnation. At a depth of 60 meters there is found a particularly rich layer containing asphalt with the following analysis:

Bitumen and volatile matter	72.6
Carbon	14.0
Terreous residue	13.4
Total	100.00

This asphalt is partially soluble in alcohol, and more so in essence of turpentine.

Apart from these various deposits, there has already been mentioned under the name of Judean bitumen, the bitumen which floats on the Dead Sea and would appear to originate from thermal sources in this lake bed.

GERMAN COAL TRADE.

GREAT INCREASE IN CONSUMPTION—WHOLESALE PRICES.

Consul Talbot J. Albert, reporting from Brunswick, says that perhaps no more striking proof can be given of the prosperity and the remarkable economical development of Germany than the increased consumption of coal, which he treats statistically as follows:

Since 1895, or in a round dozen years, the consumption has doubled, having risen from 100,000,000 to over 200,000,000 tons. In the year 1902 Germany was supplied with 148,000,000 of anthracite (Steinkohle) and bituminous (Braunkohle) coal. Last year (1907) the amount supplied was 208,000,000 tons.

If the consumption is reckoned to the head of population, this would show in five years an increase from 2,500 to 3,300 kilos (5,500 to 7,260 pounds) per person. In the years 1906 and 1907 there existed a considerable variation in the source from which the increase was supplied. While in 1906 the domestic mines bore the burden of the increase, in 1907 the scarcity in the home market favored the importation of English coal, which showed a round increase of 5,000,000 tons.

As to the relation of anthracite and bituminous coals the statistics show a steady increase in the consumption of the latter kind. In

1907 there were consumed 137,000,000 of anthracite and 71,000,000 of bituminous coal. A few years previous the consumption of anthracite was three times greater than that of bituminous coal.

The average advance in price of all kinds of coal between 1895 and 1907 was from 16.3 to 18.3 marks ($3.88 to $4.35) per ton wholesale, or about 12 per cent. The price is fixed by the coal syndicate. The State of Prussia is a large owner of coal mines and is represented in the syndicate, but has not a controlling vote.

PETROLEUM PRODUCTION.

COLOMBIA.

REFINERY BUILDING AT CARTAGENA—OIL FOUND IN THE COUNTRY.

Consul Isaac A. Manning sends the information that Colombian capitalists have organized the Cartagena Oil Refining Company with a capital of $150,000 American gold, all of which has been subscribed, the object being to exploit a concession for the refining of petroleum in the city of Cartagena. The consul furnishes the following details of the enterprise:

The concession was granted for a period of twenty years, but has already run some four years. The company has begun to erect the necessary buildings and expects to have the machinery all in place and the plant in full operation by July 1. The refinery will have a capacity of about 150,000 cases of refined oil (10 gallons to the case) per annum.

The factory will be located on Cartagena Bay near the pier at La Machina, and will be of lumber and zinc construction. The greater part of the machinery has been tentatively ordered from England, although the president of the company informs me they will be in the market for tin cans, cases, and crude petroleum as soon as the refinery is in place.

WHERE NATURAL DEPOSITS EXIST.

It is the intention of the company to import its crude oil for the present, probably from the United States, but there is an extensive territory along the Caribbean coast of Colombia where petroleum seems to be present, and later the company expects to attempt the development of these deposits.

In the valley of the River Sinú it is stated that there are a number of petroleum springs, from which the oil is gathered in small quantities for lubricating purposes and for illumination. One spring there is said to produce an oil sufficiently pure to burn in a common kerosene lamp. It seems that little effort has been made at any time to develop the oil industry here, although the original concessionaires have a boring apparatus and commenced at one time to investigate a district near the town of Turbaco, 26 kilometers (kilometer= 0.62 miles) from Cartagena, but suspended work before any depth had been reached. They state that they found gas, slate, and other signs of oil, and do not doubt that had operations been continued the presence of oil would have developed.

There is no doubt that oil exists at various points in Colombia, and geologists have frequently declared it to be present. They have made

the same declaration as regards coal, which is said to exist in great quantities near the coast to the south of Cartagena. A certain American professor of geology reported as follows in 1867:

> All this area (referring to a district of about 5 miles that he had examined) is a true deposit of coal, which contains the same alternate strata of lime, slate, clay, coal, and petroleum and sand as that of the true carboniferous series of the United States of America, and differs therefrom in nothing. The coal is hard, breaking in cubes, is bituminous in character, and a little harder than Richmond, Va., coal.

The geological character of the country would indicate both petroleum and coal deposits, which may both be developed before many years. There is a duty of 8½ cents per kilo (2⅛ pounds) on refined petroleum and a duty of 1 cent per kilo on crude petroleum; hence the new company will enjoy a very large differential.

BRITISH INDIA.

DECREASE IN THE HOME PRODUCTION—IMPORTS—EXPORTS.

Consul-General William H. Michael, of Calcutta, furnishes the following statistics concerning home and foreign petroleum in India:

The production of petroleum in India, which in this case means the production of Burma, was as follows during the years 1904, 1905, and 1906, as given in the annual report on mineral production for 1906:

Province.	1904.	1905.	1906.
Burma oil fields:	*Gallons.*	*Gallons.*	*Gallons.*
Yenangyaung Magive	73,428,960	85,648,749	89,549,252
Singu, Myingyan	23,677,450	37,541,177	34,843,621
Yenangyat and Pakokku	18,660,485	18,759,818	13,172,136
All other	137,909	114,102	89,252
Total for Burma	115,903,804	142,063,846	137,654,261
Eastern Bengal and Assam	2,585,920	2,733,110	2,897,990
Punjab	1,658	1,488	871
Total for India	118,491,382	144,798,444	140,553,122

The following statement shows the imports of petroleum into India during the years 1904, 1905, and 1906:

Whence imported.	1904.	1905.	1906.
	Gallons.	*Gallons.*	*Gallons.*
Russia	42,256,738	17,205,175	
United States	7,628,275	18,737,577	28,494,794
Borneo	6,931,291	7,039,812	1,795,715
Straits Settlements	8,985,538	12,508,844	8,499,198
Sumatra	3,566,619	6,816,991	9,731,405
All other countries	1,222,397	16,363	6,663
Total	70,590,858	62,324,762	48,527,775

India's exports of mineral oil during the three years were as follows: 1904, 3,787,677 gallons; 1905, 2,422,589 gallons; 1906, 903,545 gallons. The exports of paraffin wax during these years amounted to 42,940, 63,966, and 61,097 gallons, respectively.

MODERN APPLIANCES.

TYPEWRITERS.

NICARAGUA.

OPPORTUNITY FOR SALE OF LOW-PRICED MACHINES.

Consul F. M. Ryder, writing from San Juan del Norte, states that the demand for typewriting machines in this consular district is limited to the larger business houses and Government offices. He continues:

This is not from lack of interest in its use, but rather on account of the inability of clerks and inexperienced stenographers to purchase machines at present prices, especially in view of the comparatively short time which some of the best machines in the market will continue to do satisfactory work in this climate. The life of the average typewriter on this coast—that is to say, the time during which the work will be acceptable to operator and client—will not exceed two years, even where a machine receives the best of care. There is so much dampness and humidity in the atmosphere that it is impossible to keep the machine free from rust, and it generally becomes completely clogged and is useless.

If it were possible to place upon the market a well-built typewriting machine with all parts made of gun metal or other metal which would be practically rust proof and which could be sold with reasonable profit for $50 gold or less, I am of the opinion that a considerable number could be disposed of, with the result that typewriting would become more general. At present prices, however, there will be no further demand worth mentioning, as the cost limits the sale to those who can afford the luxury, and these are few.

The market for rebuilt machines would depend altogether upon the machine and the price. I have no doubt but a number could be sold on the installment plan, and in this manner it would be possible to induce clerks and ambitious stenographers to learn typewriting. This would open a field for future sales which would be valuable, providing these secondhand machines could be sold at a price within the reach of prospective purchasers.

HOW TO SECURE TRADE.

As the field has not been worked, it would be necessary to send one of the best American salesmen into the country and establish a permanent agency; one familiar with the Spanish language will prove the most acceptable in the end; one who is capable of demonstrating the superiority of his machine, as well as a good salesman. It is useless to appoint a local agent, who generally is in other business, and expect him to actively push the sales; he accepts the agency *as a side issue*, or for the purpose of securing a typewriter for his per-

sonal use at as nearly cost price as possible, and may dispose of an occasional one to a customer making direct request for the same.

The active salesman who has had experience in this line in the United States is the only person to organize and carry on a successful campaign for the sale of typewriting machines; a man may have made a success in other lines of business in this country, and be a complete failure in selling typewriters, and it is poor judgment to waste time in the experiment.

In this consular district there are only 20 typewriters in use, and these are in the Government offices and general stores. They are all standard machines of American manufacture purchased in the United States, as there are no dealers in machines or supplies in this locality. The typewriter in use in this consulate has all parts made of gun metal, and, although it has been in constant use for over eight years, and the rubber cylinders and bearing rollers are somewhat worn, it does better work than any other machine which has been used in this climate for two years, showing very little trace of rust, much of the metal retaining its original brightness. This instance is cited for the purpose of demonstrating the durability and adaptability of this particular metal and finish to these climates.

Typewriting machines are on the free list everywhere in this Republic, excepting San Juan del Norte, where they are subject to an ad valorem duty of 20 per cent.

PARAGUAY.

HOW TO INCREASE SALES—ESTABLISHMENT OF BRANCH DEPOT.

Regarding the opportunities for marketing typewriters in Asuncion and elsewhere in Paraguay, Consul Edward J. Norton states that very little active work is being done to encourage the use of writing machines or to increase sales. He adds:

The plan of personal solicitation with its accompanying presentation of well-defined argument, showing the need and utility of typewriting machines, is not generally followed here, so that a business man who reaches the conclusion that he requires a machine must go to one of the several agencies in this city and investigate them for himself.

I have noted also that the salesmen for the different firms who carry typewriters are seldom able to handle the machines expertly or even in a manner which would tend to further arouse the prospective customer's interest and increase his desire to possess one. Also the fact that most salesmen are deficient in knowledge of the mechanical features of the machine carried and therefore unable to point out their advantages or give a clear explanation as to the manner of operation is another drawback. When a typewriter is purchased here the sale is effected with little effort, for the simple reason that the purchaser absolutely requires the machine and he takes it to his office and usually learns its operation by experience or experiment.

I am informed that a good opportunity exists here for increasing the sales of typewriters. Some of the methods practiced in the United States, if intelligently adapted to conditions here, might produce excellent results. A sale would undoubtedly result to a business man were an offer made to the effect that his clerk would

be taught how to operate the machine. Free instruction and free practice during a selling campaign here would be a strong point to encourage the use of writing machines.

In this country Asuncion would be the only city where agencies could be established or where a canvass would be profitable, it being the commercial center of the Republic. However, in planning a selling campaign in this part of South America, to cover the ground thoroughly, I would suggest the establishment of a branch depot in Buenos Aires with a stock of the machines and supplies. Prices could be quoted for immediate delivery in Argentine currency, relieving the prospective buyer of being obliged to calculate freights, duty, etc., and also of the possibility of having to wait three or four months for his machine, which would be the case if orders were cabled to the United States.

GOODS IN BOND—TYPE OF MACHINE MOSTLY USED.

Shipments to Asuncion, when marked "in transit for Asuncion," come through the customs both at Montevideo and Buenos Aires in bond. This applies to direct shipments only, but one may be able to import consignments in bond also. Information on the latter point might be obtained from the Argentine and Uruguayan consuls in New York. I am informed, however, that merchandise may be stored in Montevideo in bonded warehouses for a period of twelve months free of cost, and if this information is correct it would appear to favor Montevideo as a location for the establishment of a directing headquarters, as merchants here tell me that goods are handled with quicker dispatch in Montevideo than in Buenos Aires.

The type of machine most commonly used here is American. I have seen several American makes, as well as an English typewriter and a few others of German manufacture. The visible-writing style of machine is preferred.

ASIATIC TURKEY.

DIVERSITY OF LANGUAGES HINDRANCE TO USE OF MACHINES.

Writing from Alexandretta, Syria, Consul Jesse B. Jackson states that people interested in the sale of typewriting machines in Turkey are confronted with a peculiar and complex situation. In the first place, unlike the mother tongues in many other countries, Turkish does not prevail throughout the Empire as the dominant mercantile language. The consul adds:

On the contrary, the majority of the importers and other business men have long since adopted French as the most useful in correspondence with the foreign firms with whom they transact business—English, Italian, German, Greek, Arabic, Turkish, and Armenian—following in the order named. This is particularly true of the coast cities and towns.

Thus a firm doing business of any magnitude must carry on its correspondence in several languages with its numerous clients and patrons of the various parts of this country and Europe. Therefore, if a firm wishes to supply itself with typewriting machines to cover most of the required languages, it is necessary either to purchase one

machine of the removing shuttle or wheel variety, supplied with a separate attachment for each language, or to go to the extra expense of buying several machines of some other mode of construction. According to my observation, one method has been adopted about as frequently as the other, but the high-grade type-bar machines seem to be slightly more in use.

In Turkey the printing of anything from a circular letter to a book can only be done under a permit from the Government. Therefore, typewriters writing Turkish or Arabic are prohibited from passing through the custom-house, and only within recent years have machines writing other languages been admitted. Consequently those firms wishing to push the typewriter business in Turkey should for the present confine their efforts to those languages other than Turkish and Arabic.

The machines most commonly in use in this locality are well-known types of American manufacture and a less number of various machines of European make. It is clear that America has the lead in this line; and, from the praise I have heard from the owners of several of such machines, it is evident that this lead can easily be retained if the least attention is paid to the market by the American manufacturers.

The prices that prevail here appear to be about 25 per cent higher than in the United States, being the home price with transportation and customs duty added, the latter item being 11 per cent ad valorem in all cases.

POSSIBLE MARKET IN BAGDAD.

DEMAND FOR TYPEWRITERS WITH ARABIC CHARACTERS.

Consul William C. Magelssen writes as follows from Bagdad:

There are not more than 20 machines in Bagdad, a city of 200,000 people. These typewriters are of various American makes. They average in price about $100, while the customs duty is 11 per cent. The language of this section of Turkey is Arabic, and I believe quite a market can be created here for typewriting machines with Arabic characters. This can be done by sending a sample machine to this consulate or to a firm of this city, to be exhibited and tried. The natives of this country will not purchase such a machine unless they examine it and see it work. I am confident that a properly constructed Arabic typewriter could be disposed of immediately upon its arrival and would lead to later orders. There is no market for machines writing European languages. [Name of firm can be obtained from the Bureau of Manufactures.]

GERMANY.

AMERICAN TYPEWRITERS WELL REPRESENTED—SALES CAN BE AUGMENTED.

Consul Samuel H. Shank, of Mannheim, writes that the use of typewriters in that German district is not as general as in the United States. He adds:

This is probably due to the fact that salaries paid to copyists and clerks here are not as large as those paid in the United States, and consequently the saving of time is not so important. It is estimated

that there are in use in this locality about 2,500 typewriters, of which 1,800 are American made. There are different makes of American typewriters, which are sold at retail from $83.50 to $148.75. The wholesale price is about 25 per cent less than the retail price. The duty on typewriters is $14.28 per 220 pounds, which makes the duty from $1.80 to $3.10 for each machine.

It would seem that there is a good field here for an energetic agent, especially if a cheaper machine could be sold. The two cities of Mannheim and Ludwigshafen, with a population of 250,000, are growing rapidly and are important centers of commerce. It is impossible to get representatives here, but I believe it will pay to send an energetic American who can speak German and who is familiar with the business and allow him to remain long enough to get the business well established in each place where it is desirable to locate an agency. I believe that anything short of a systematic, energetic business campaign is a loss of time and money.

MADAGASCAR.

HOW TO SUCCESSFULLY SECURE AMERICAN TRADE.

Consul James G. Carter, of Tamatave, writes concerning the use of typewriters in Madagascar, as follows:

The makes of typewriters most commonly used in Madagascar are American. A French machine is used in most of the government offices, either sent out by the French Government at Paris or purchased from a local agent. An English firm here with branches throughout the colony has about 9 American machines. American machines are also used by a German firm at all of its branches, and by the bank, Comptoir National d'Escompte de Paris.

In all there are about 50 machines in the colony. The average business house in Madagascar does not use a typewriter, and a persistent intelligent effort in the matter of introducing American machines to the trade should bring out most satisfactory results.

The duties imposed upon typewriters of American make are the same as those imposed upon American typewriters imported into France, varying according to the material used in the building of the machines.

BRITISH INDIA.

TRADE IN ITS INFANCY—SUCCESSFUL BUSINESS METHODS.

Consul E. H. Dennison writes from Bombay that most all the standard makes of American typewriters are used in that city of British India. He further states:

The local agents generally get full trade discounts, the same as are allowed to agents in America, and the standard $100 machines sell for 350 rupees, equal to $114. One English machine retails for $73. The custom duties imposed upon typewriters of all makes is 5 per cent.

The typewriter trade in Bombay might be said to be still in its infancy; although some agencies have been established for a number of years, there has not been much progress made. I believe that this is due entirely to a lack of proper methods of pushing goods. There

have been several energetic American canvassers in Bombay recently who got out and hustled for business on the American plan, and their efforts were most successful.

FRANCE.

MACHINES GROWING IN FAVOR—A GOOD MARKET.

Consul Charles P. H. Nason, writing from Grenoble concerning the employment of typewriters in that section of France, says:

It would appear that the typewriter is not yet very extensively employed in these parts, although in use. It is fair to say that it is growing in the favor of the general public every day; in consequence there should be good scope for business if properly undertaken and prices are right.

Canvassers for well-known standard American makes of typewriters regularly visit Grenoble and vicinity, but these machines on account of their high price do not meet with the success that a less costly one would be likely to obtain.

SWISS TELEGRAPH AND TELEPHONE.

CONDUCTED ECONOMICALLY AND EFFICIENTLY BY THE GOVERNMENT.

In stating that the Swiss Government owns and operates all the telegraph and telephone lines in the Confederation, Consul R. E. Mansfield, of Lucerne, furnishes the following details as to their management:

The telegraph and telephone service extends to nearly every town and village in the country, and every railway station is supplied with both systems. The service is good and the rates low. They are operated in connection with the postal service, every post-office being provided with telegraphic facilities, and practically all of them with public telephones.

Distances in Switzerland being short, the service prompt, and the rates low, the telegraph and telephones are liberally patronized. Long-distance connections are made with all the local or urban telephone lines, enabling patrons to communicate with all cities and towns in the country. There are also international connections with all the countries bordering on Swiss territory.

A feature of the Swiss telephone service is that in addition to owning and operating all the lines, the Government manufactures all the instruments used, makes the insulations, and controls the business absolutely.

LENGTH OF LINES, REVENUE, AND PROFIT.

The total length of telephone lines in Switzerland is 10,548 miles. The annual rental charge for offices, business houses, and residences is $12.45 per year. An additional charge of one cent is made for each call in the town. For interurban or long-distance calls the rate is 2 to 14 cents for three minutes, according to distance, 14 cents being the maximum rate for any distance in the country.

The number of telephone subscribers in 1906 was 53,711. During the year there were 32,071,177 local, 7,251,193 interurban, and 299,209

international calls over the Government telephones. The revenue from all classes of calls for 1906 was $829,732; income from rent on 53,711 telephones, $668,702. Total, $1,498,434.

The total length of telegraph lines in Switzerland is 66,683 miles. The total number of telegrams transmitted in 1906 was 4,918,679, of which 2,339,956 were international and 1,698,838 local. The total revenue from telegrams for the year was $1,596,664.

There is a Government tax of 30 centimes, equal to a fraction under 6 cents American money, on each telegram sent. In addition to this charge there is a universal rate of one-half cent a word throughout the country, distance not being taken into consideration. A telegram of ten words costs only 11 cents. The international rate is 30 cents per word to New York, 2 cents to France, Germany, Italy, and Austria, 5 cents to Spain, 6 cents to England, and 9 cents to Russia. In addition to the foregoing there is a Government tax of 10 cents on each international telegram or cable.

The total income from telephone and telegraph service for 1906 was $3,095,098; expense, $2,231,217; profit to the Government, $863,881. The telegraph and telephone service, like the Government railways and parcels post, are economically administered, the object being to render the best service possible at the lowest possible cost to the people.

SMOKELESS POWDER MACHINES.

GERMAN MECHANICAL EQUIPMENT IN MANY FOREIGN FACTORIES.

Consul Talbot J. Albert, of Brunswick, furnishes the following description of a prosperous German machine industry:

One of the most successful enterprises in Brunswick is the manufacture of machines for the production of smokeless powder. This is a branch of a firm whose regular line of business is the manufacture of centrifugal sugar machinery. The firm has recently received important orders, not only from European but more distant countries, for the equipment of factories for the manufacture of smokeless powder, gun wool, dynamite, celluloid, etc.

In these plants the gun wool or collodion wool is manipulated with a mixture of cotton and sulphuric acid and changed into gun wool, which is the basis for the celluloid and the artificial silk employed in the manufacture of smokeless powder. The firm claims that this process was first made use of by their nitrate centrifugal, which has been so improved that the conversion of the ingredients into smokeless powder takes only one-half to one hour.

FOREIGN ORDERS FOR MACHINERY.

Last autumn the firm received a second order from the Imperial War Ministry of Austria for a complete nitrate plant for the Austro-Hungarian powder factory, Bluman near Felixdorf, similar to the one furnished two years previously. Shortly afterwards an order was received for the complete equipment of the new national powder factory to be erected in Mexico. This year (1908) the firm has received an order from a concern at Lyon, France, for the erection of a large nitrate plant for the manufacture of collodion wool, which

will be employed for making celluloid for photographic films and artificial silk. The French company is a branch of a firm widely known by its invention of colored photographs.

The Brunswick firm recently received an order from the chief of the military committee of Brazil, visiting Germany, for a nitrate plant to be used in the national powder factory which is being erected in that country. The rest of the equipment of this factory has been given to the firm of E. I. Du Pont de Nemours & Co., Wilmington, Del.

The European countries which make use exclusively of nitrate plants furnished by the Brunswick firm are Prussia, Bavaria, France, Austria, Turkey, Servia, Switzerland, and Sweden; also the powder factory at Schlüsselburg, which supplies Russia; the factory at Wetteren, which supplies Belgium; the factory at Amsterdam, which supplies Holland, and all the important factories of Germany. Further, the Brunswick firm has equipped four national factories in China, the National Factory of the Argentine Republic, and the Naval Department Factory at Newport, United States.

FRENCH MACHINERY MARKET.

BEST SALES METHODS FOR AMERICAN MANUFACTURERS.

In reply to a request for general information from an American company manufacturing an important line of elevating, conveying, and mining machinery, Consul-General Robert P. Skinner, of Marseille, repeats that if such firms desire to broaden their export relations in France in a permanent and satisfactory manner it is indispensable that they send competent representatives to investigate the whole question. Mr. Skinner adds:

My private conviction is that a company manufacturing an extensive line of machinery would find it advantageous to organize a branch house in Paris, under its own direct control, or at least to organize a strictly American sales agency in cooperation with a very limited number of other responsible firms willing to share in the expense. There is no doubt in my mind that the particular class of machinery under discussion can be sold in France; indeed American conveying machinery is in general use on the Marseille docks and elsewhere at the present time. Furthermore, the construction of the Marseille-Rhône canal, including the piercing of the Rove tunnel, is bound to create a special market for labor-saving machinery of the type employed in American railroad, canal, and tunnel building. The state engineer in charge of this great work would be glad at this moment to be able to discuss the latest American methods with the qualified representatives of American constructing firms.

LISTS OF DEALERS—CUSTOMS-HOUSE SYSTEM.

For a "complete and reliable list of all the mechanical and industrial concerns and their responsibility" in France the Didot-Bottin Directory, published at Paris, may be consulted. This work is issued in three parts, one being a complete directory of the city of Paris, another a directory for France, and a third a directory for the entire

world. This is revised annually. The price of the complete edition is 34 francs ($6.56). The responsibility of various firms can be ascertained from American commercial agencies, which now have world-wide connections.

Regarding custom-house formalities, it is generally known that American goods with few exceptions are subjected to the French maximum tariff, this maximum rate being higher than that applied to goods from other countries. To ascertain the rate applicable to American devices it is usually necessary to know their weight and the materials of which they are made. It is usually possible to know with absolute accuracy the rate applicable to any particular object, but at the same time the custom-house rule is to refrain from guaranteeing the amount of duty to be collected in advance of the presentation for entry of the particular merchandise in question. [The Didot-Bottin Directory mentioned is on file in the Bureau of Manufactures. The customs tariff of France has been published by this Bureau and copies are available for distribution.]

CREDIT TERMS—MINING MACHINERY.

Most of the machinery dealers in Marseille, upon supplying reasonable assurances of responsibility, expect a credit of thirty days, dating from the end of the month in which the merchandise has been received, with 2 per cent discount, or sixty or ninety days' credit, according to the terms of the agreement.

Mining machinery has little sale in this city. There is, however, a widespread need for such machinery for the iron and phosphate mines in Tunis. In regard to that market the American consular agent, Auguste J. Proux, may be consulted. There are numerous coal mines in the neighborhood of St. Etienne, where the American consul, Mr. William H. Hunt, is in a position to supply any desirable facts. There are also important mining enterprises near the Belgian frontier. [A list of Marseille parties buying machinery of various kinds which may be of especial interest is forwarded and may be obtained from the Bureau of Manufactures.]

AMERICANS ABROAD.

PERTINENT ADVICE.

CHINA.

PROFESSIONAL, COMMERCIAL, AND SOCIAL CONDITIONS IN THE ORIENT.

In reply to frequent inquiries as to opportunities at coast ports and in the Chinese interior for young Americans, professionally or commercially trained, or otherwise, Consul-General Amos P. Wilder, of Hongkong, furnishes the following information:

It is true that American interests can only be built up in the Orient by having Americans here to push them, and it may seem incongruous for a consul, whose first business is the extension of American trade, to chill the ardor of young Americans whose eyes are turned toward these awakening districts of the globe; yet a frank discussion of the conditions will enable those who insist on coming to know in advance something of what awaits them, while it may deter others, whose oriental experience would only spell disappointment and perhaps worse.

There are not a few Americans holding fair positions in the Orient who would gladly quit if they had the passage money home and a position awaiting them there, and others, who have no regular employment, are steadily going downhill. Making up purses to get "nationals" home is a part of the day's work for men of all countries. If a man is at all unsteady in his habits, or even if he is weak and easily led, he should keep away from the Orient. Freedom from restraint and from supervision, climate, the "chit" system under which I. O. U.'s are substituted for cash in all transactions, expensive sports, gambling, and other dangers combine to undermine young men from other countries. Their number is limited in each community, and they are deprived of the social supervision and uplift of entertainment in good houses. There are American firesides in these cities where the high standards of cordiality and kindly interest of the homeland are conserved; they do what they can for our young men, but the number of such is so small (Shanghai, to an extent, excepted), the life so intense, and the population so shifting, that young men are thrown on their own resources.

PHYSICIANS AND DENTISTS.

In the English colonies access to some of the professions is difficult or impossible for men of other nationalities. The prestige of long residence is of great advantage. Shanghai is open to American physicians as well as dentists. Swatow, Amoy, Foochow, and the other coasts and river ports are a field for any who wish to try them, yet the field is occupied, except as a newcomer may command a Chinese clientele. There are but few foreigners in the best of these

cities. One is not to infer that these communities are bereft of skill in the professions. Bright Chinese and Eurasians are graduating from medical and dental schools, and those from the latter are competing for even the patronage of the foreigner.

There are no restrictions as to the practice of dentistry in Hongkong, where there is a goodly number of dentists. Prices to foreigners are high. Some dentists have made fortunes in the coast ports, especially those who came before competition was so brisk. To offset them there has been a train of young dentists, well enough equipped, but unable to withstand the temptations of the East. Their stories are to be found in every consul's file.

Dentists in practice here bring out assistants under contract for a term of two or three years. While the salary fixed looks large to young dentists at home, the cost of living is high, and the conditions rigid, usually including a provision that the new man, in the event of leaving his employer, shall not practice in the port for a term of years.

In Hongkong, where the requirements for medical practice are on English lines, there are German practitioners, but no Americans. The profession is mainly British and of high standard. In Shanghai the field is more open, and in the Chinese cities there are no requirements. But unless one has appointment as physician to the Imperial Maritime Customs, or like line of sure business, it is not certain he could make a living. The missionary physicians, many of them of large experience and of a high order of ability, care for the foreigners in many places. Kweilin, the capital of Kuangsi Province, is a large city—no one knows how large, but probably 100,000. There is no "foreign" physician of any kind there, and less than a dozen foreigners, all missionaries. When these wish medical advice they telegraph symptoms to Hongkong, the answer comes by wire, and the Kweilin people draw on their medicine chest for the needed drug. The city is the home of the governor and other high-class and intelligent officials. It would seem as if a well-trained American physician would do well there, but the matter should be thought out most carefully. It would take two years to learn the language, and the likelihood is that one who came out, unless he were upheld by a philanthropic purpose, would return, repulsed by the solitude, within six months, or take on the ways of the natives and become one with them. This is even assuming that he could earn a living there, for the Chinese, even the most intelligent, cling to their native practice.

COMMERCIAL LIFE IN CHINA.

There are small contingents of young Americans in a dozen cities of China. Those who are doing best are under contract with some large concern of home management. There are individual concerns in a smaller way, doing an export and import business or engaged in some specialty. National lines are followed quite sharply in the social and commercial life of these cities. The big foreign firms bring out their own young men; their national club is their center. At official receptions the "nationals" mingle pleasantly, but the English, the French, and the Americans know each his own nationals best.

To do legitimate business in the East in these days calls for large capital and expert knowledge. Only a most clever business man could come to the East without connections and with only a little

money and get an independent footing. He has to compete with firms of other nations who have long been schooled in foreign business. He has to deal with the Chinese, who are second to none in business capacity.

The cost of living for a foreigner in one of these ports is beyond anything that an average American can understand. In the United States it is possible for a young man to live quietly in a respectable boarding house, save his money, and eventually own a business. In these parts he must either live with the Europeans or with the natives, and the European mode of life here is very expensive.

The half dozen large American concerns that maintain staffs in these ports select their men carefully, give them some home training, and have them physically examined before they are appointed. Such a coming is different from a start made without a connection, with a vague hope of "finding something" before one's money gives out. In the latter case, nine times out of ten, distress and likely ruin await the newcomer.

CONCLUDING REMARKS.

American engineers and railway experts occasionally get employment in China. The later idea among the Chinese is to employ only their own people in such work, and an increasing number of properly trained young Chinese are presenting themselves. Some of the constructions are financed by English or French capital, and the practice in these is to employ only men of their own nationalities. Trained female nurses can usually find situations, but the life is so different from that at home that, even if they succeed financially, they will not likely be happy. Sir Robert Hart, one of the most successful foreigners who ever came to China, and who has spent his life in the highest positions, dissuades Americans, with their home opportunities, from coming here, and says that had he his life to live over again he would elect a career in his native land.

ADDITIONAL WARNING AND ADVICE.

NO OPPORTUNITIES FOR AMERICANS WITHOUT PREVIOUS ENGAGEMENT.

Consul Wilbur T. Gracey, of Tsingtau, also transmits the following report regarding business opportunities in China as a warning to young men in America who believe that they can secure better positions in the Far East than in America:

I am continually hearing of young men in China who have come from the Occident expecting to secure positions here, and are either stranded, or forced to enter into uncongenial occupations, and believe that a warning should be published in American papers.

China may be a land of opportunity to the business man with money, but any young man who is willing to work will find better opportunities every day in the large American cities. Many young men leave their homes in the United States, ship as stowaways, work their passage to China, or spend their last few dollars for tickets, in the hope of stepping into good positions on their arrival in the Far East, and are surprised to find that all positions are filled.

Most of the positions with respectable firms in China are filled. Each firm which has its business here has an agent in New York, London, or Berlin, as the case may be, and in the event of further

assistance being needed in China, is able through correspondence with agents to secure young men from home who are familiar with the business in which the firm is interested. Most of the large banking, shipping, tea, insurance, and other institutions take young men into their home agencies as students, where they remain for a period of years at no salary, or with merely sufficient to pay their current expenses, and are promoted from the home branch to the house in China.

CUSTOM OF FOREIGN FIRMS.

All of the large British institutions here train their own corps of assistants, and the German and American business firms in the East are more and more following the same course. Before coming to China, these young apprentices are obliged to go through strenuous examinations. They are physically inspected to insure their being capable to withstand the trying climate of the Orient, and are sent to China, with their passage paid, on a contract wherein they guarantee to remain a fixed number of years with the firm. On arrival they are paid what would appear at home an excellent salary, but which owing to the extra expenditures here is in no way excessive. They are also given free quarters, free medical attendance, and sometimes their bills for food are paid.

Usually each firm has a house for its younger employees, where they live together at the expense of the firm. A certain portion of their salary is often hypothecated for insurance purposes, and they are not allowed to marry until they are in receipt of a compensation considered sufficient by the firm, unless they have some private means aside from what they receive as salary. It is because of this long training and knowledge on the part of the firm that they are especially adapted to the work in hand, that they receive good salaries; and it is the rumor of these big salaries, without any knowledge of the particulars attached to the situation, that makes young men in America believe that there are such excellent opportunities here.

SHARP SOCIAL DISTINCTIONS.

If a young man lands from America in Shanghai unknown, it may be safely said that it is impossible for him to secure even a temporary position. After floating about the city for weeks or months he may possibly be taken on as a clerk in a store, or by the Imperial Customs of China on what is known as the "outdoor staff." These men correspond to the customs inspectors in America (they examine all the cargo coming and going), but are given a different social position from that of such a Government employee in the United States. They are not allowed to become members of the social, rowing, recreation, or other clubs, nor do they associate with the young business men of the port.

A strict line of demarcation appears to be drawn in the social life of the Far East between the Government officials, business and professional men, and the "indoor staff" of the customs service, and the "outdoor staff," store clerks, and steamship officers. These latter have their own small clubs, recreation grounds, etc., but their position in the community is such that it may jar considerably on the spirit of a free American boy to be looked down upon by persons having merely a different business status, and who are possibly not so *well educated nor* of a better family than himself.

HOW POSITIONS ARE FILLED.

Practically every position in the Far East is already filled, or if there is a vacancy it will be filled by some young man brought out by the firm directly from home. The lower positions in business firms, such as office boys, caretakers, etc., are all occupied by Chinese, who can be obtained at salaries that would not be sufficient to keep an American boy in clothes. They are good accountants, can be depended upon to fill clerical positions in a competent manner, and are silent assistants, aware of their position merely as assistants. At home a young man can enter a firm as office boy and if he has ability may rise to the position of manager or owner of the business, losing no position in society from the fact that he began at the bottom.

In China if a man begins in the "outdoor staff" of the customs he may rise to the head of the "outdoor staff," but transfers are seldom or never made from the outdoor to indoor service, so that it is impossible for him to be promoted above a certain grade.

There is only one condition on which any young man should come to China, and that is when he has an assured position or a contract with a firm. It is not sufficient that a friend in China has written that he can give him a position, or secure a position for him. It must be understood what the position really is, what would be the social standing of one occupying it—that is, whether he would be looked down upon by other men in business—and how the compensation is to be paid. Furthermore, it is of the utmost importance that, when an assured position is found, the young man has sufficient physical ability to withstand the peculiarly trying climatic conditions of the Far East.

FLUCTUATION OF PURCHASING POWER.

At the present time money goes no further in China than in any other part of the world, the days of cheap living in the Orient have passed, and when a man is offered a salary of $100 a month he should find out if the $100 is in American dollars or in the varying silver currency of China. If the salary is paid in American money he will find that, owing to the exigencies of exchange, in one month $100 gold will bring about $180 in local China dollars, while a year later, at a different rate of exchange, it may equal $250.

When at the latter rate, however, its purchasing power will be little better than the $180 of a year before, and when the $100 gold again degenerates to $180 local currency, as it is liable to do, he finds that the price of everything has advanced and the purchasing power of his money has dropped to its original status. In other words, he is losing $80 a month. Exchange is the bugbear of the man of limited means in China, and when a man is told that he will receive a certain salary in China he should institute some inquiries along the following lines:

SUGGESTIVE POINTERS.

First, it should be learned if the prospective employer is a man attached to a responsible firm. This can be discovered either from bankers or from any commercial agency.

Second, inquiries from any bank dealing in foreign exchange as to how much the salary offered would amount to in American gold, then subtract 15 to 20 per cent for probable loss by exchange, and figure if the resulting amount would enable him to live respectably in New York. If the salary quoted is in gold dollars, transpose it into Mexi-

can, take off the 15 or 20 per cent and remember that it would be difficult to live on a salary of less than $200 Mexican a month, even when a house or rooms are provided.

Third, be sure the physical condition is healthy with no liability to stomach or bowel troubles, and if possible consult a physician about the conditions and the diseases of China to which one is liable.

Fourth, if the man has a good position in America, or if he is liable to have one, let him stick to it. Every boy has a better opportunity at home than he will get in a foreign country. There is more need for good men, and more need for ability inside the United States than there is for an unknown man in China.

Fifth, let him be sure that he is strong enough to withstand the temptation to excessive drink. There is a great tendency throughout the Far East to excesses of all kinds, and a much larger percentage of young men are killed by drink in the Orient than is generally known. This may not be a direct death, but continual drinking affects the stomach and bowels, and throws open the doors for the admission of the diseases of the East, with dangerous effects. The temptations to drink overmuch in China are infinitely stronger than at home, a custom of continuous drinking being prevalent throughout the entire East.

Finally, he should remember that he is giving up a great many of the best opportunities of life in coming to the Orient. There is no opportunity for education here, no theaters, no good music, no lectures, no educational institutions, no technical or other schools, no free libraries, no magazines or other good literature, except what comes from home a month late, and the social life is entirely different from anything at home. Unless a man or boy is perfectly certain that the compensations are worth all this he had much better stay away.

BRITISH SOUTH AFRICA.

MEDICAL PROFESSION GREATLY OVERCROWDED—NO ROOM FOR OUTSIDERS.

Replying to an inquiry from a young man about to graduate from an American college, who wished to begin his professional career in the Transvaal, Consul John H. Snodgrass, of Pretoria, writes as follows in regard to conditions in that colony:

During the past few years a number of physicians with American degrees have made inquiries about the opportunities presented for the profession in this consular district, they having read in the newspapers and magazines the word-paintings of optimistic writers and become imbued with the desire to engage in practice here.

To each and every one the reply has been: It is necessary for any practitioner wishing to establish himself in South Africa first to secure a degree from a medical school within the confines of the British Empire. It is a strict law that prohibits all outsiders from entering British South Africa to engage in the practice of medicine or dental surgery. It is true, though, that a few American doctors who practiced in the Orange River Colony and the Transvaal before the Anglo-Boer war have been permitted to continue their practice, but these exceptions are not numerous.

In the whole of British South Africa there are not over 1,000,000 *white people*, 300,000 of whom are living in the Transvaal, but since

the intense financial depression that has hung over this country for the past year and a half, there has been a great exodus of the white race from every colony, while the Asiatics have been pouring into some of the coast provinces by the thousands. Instead of welcoming an increase in the medical profession, the Transvaal Medical Society is using every endeavor to prevent the uninitiated from coming among them.

WARNING TO OUTSIDERS.

In spite of the fact that the Rand (the gold fields of Johannesburg) lives and dies more rapidly than any other part of the country, its white death rate last year being 18.01 per 1,000, as against 10.97 per 1,000 for the outside districts, the physicians there find that the field is overcrowded. As the population diminishes there is an increase in the medical profession relatively too great. There has been a great influx from oversea, and in addition to this it is noteworthy that an unusually large proportion of South Afrikanders take to medicine and law.

The membership of the Transvaal Medical Society, which contains the names of all who are permitted by law to practice, numbers about 390. Many of these practiced here before the war, and a few, as was noted above, who were educated in Europe or America, are still on the ground and have not been ruled out by the rigorous law of the Empire. The white population of the Transvaal is perhaps a little less than 300,000, so that there is more than 1 doctor to every 1,000 persons. Allowing for natural differences, such as the fact that the country doctor in South Africa has to deal with great distances and a sparse population, the ratio is greater than in any other country.

It would not, therefore, be wise for anyone educated in an American medical school to go to the trouble of securing a British degree in order that he might practice in one of the South African colonies.

GERMANY.

AMERICAN ASSISTANT DENTIST SECURES AN ABROGATION OF CONTRACT.

According to Consul-General Richard Guenther the district court at Frankfort recently rendered the following interesting decision in a suit between American dentists practicing in that German city:

A firm composed of two leading American dentists here about eight years ago had taken an assistant, contracting with him that in 1908 he would be admitted to the firm as a member upon certain stipulated conditions, among which was the payment of a considerable sum of money. Should he fail to fulfill the contract, the assistant was not to be allowed to practice dentistry for the next two years within a radius of 100 English miles from Frankfort unless he paid to the firm 30,000 marks (about $7,000).

The assistant, after unsuccessful negotiations with the firm to permit him to practice on payment to them of a lesser sum, brought suit in the district court for the abrogation of the contract, claiming that such stipulations for preventing competition were against good morals and public utility. He rested his claim upon a decision rendered in a similar suit between authorized dentists by the supreme

court of the Empire (the highest legal tribunal in Germany) which had so declared.

The district court adopted this view and decided in favor of the plaintiff, holding that it is against the public interests when a dentist in his feeling of responsibility, incumbent upon the exercise of his profession, is handicapped by stipulations which treat the professional activity from the point of view that it is solely a money-making matter. Stipulations of this sort must therefore be considered as being injurious to the public good and, for this reason, they should not be sustained.

This decision will give satisfaction to the public at large, as well as to aspiring American dentists. Germany and other European countries offer excellent chances of success to dental graduates. American dentists in good practice in the leading European cities have a larger professional income than their colleagues who practice in the United States.

COLOMBIA.

SLIGHT OPPORTUNITIES FOR YOUNG AMERICANS WITHOUT CAPITAL.

Consul Isaac A. Manning, of Cartagena, is in receipt of letters from various young men who are graduating from American colleges of engineering, inquiring as to opportunities in engineering lines in Colombia, which leads him to offer the following general advice:

I would strongly advise anyone desiring employment of this nature in the Tropics to place himself in touch with the exporters of machinery, etc., at New York, Boston, Philadelphia, and San Francisco, and any other cities where applications would be made for such men, but to refrain from coming to these countries seeking employment, unless well supplied with capital. Occasional opportunities offer, but they are not common, and I have seen too many good men stranded in these countries who could find no professional work to do, and were unable to compete with the laborer of the country in ordinary works.

It is therefore suggested that no one should come to tropical America for employment without a previous contract, and, further, a good knowledge of the language spoken in these countries. The need of carrying a United States passport, for purposes of identification as to citizenship, should also be better understood by citizens of the United States going abroad. Under the new immigration regulations agents for steamship lines here require absolute evidence of one's American citizenship, or they refuse to sell ticket for return to the United States without collecting the immigration tax.

RUBBER.

CULTIVATION AND OUTPUT.

NORTH BORNEO.

VARIOUS CLASSES OF LABOR AVAILABLE FOR ITS CULTIVATION.

The following information concerning British North Borneo estates devoted to the cultivation of Para rubber, the cost and kinds of labor, and the adaptability of the soil to the industry is furnished by Consul Lester Maynard, of Sandakan:

British North Borneo is divided geographically and ethnologically into four portions viz: (1) The East Coast, comprising all land, from Cowie Harbor on the south to Paitan Bay on the north, and extending inland as far as the sources of the Segama, Kinabatangan, Labuk, and Sugut rivers; (2) the Kudat District, comprising all land from Telaga to Sampanmangaio Point; (3) the West Coast, from Sampanmangaio Point to Mengalong and extending as far inland as Sungei Rayoh; (4) the Interior, from Sungei Rayoh to Tambunan on the north, Tomani on the south, and Labau on the east.

The soil of British North Borneo equals, if it does not actually surpass, that of the Federated Malay States, and is about the same as that of Sumatra. The cost of labor is as low as that of any place east of Ceylon, and the climate is well suited to the cultivation of Para rubber, judging by growth thereof in such widely different spots as Sandakan and the interior.

The Chartered Company of British North Borneo has issued a notification guaranteeing that no export duty will be assessed on plantation-grown rubber for fifty years from April 1, 1905.

EAST COAST.

At present Para rubber is cultivated at one place only on the East Coast, at the head of Sandakan Bay, and here it appears to be doing well.

Practically all estate labor on the East Coast is imported indentured labor, the men being brought from Singapore, and costing landed in Borneo $36.40 (all values throughout this report are given in United States currency), per head for Chinese, and $42 per head for Javanese and other Malays. Of these sums, $16.80 and $26.88, respectively, are recoverable from the coolie, leaving the balance to be written off as brokerage. The Chinese contract is for one year and the Javanese for two years.

Chinese have so far been used on tobacco estates only, where they are paid at a fixed rate per thousand stalks of tobacco delivered in the drying sheds, and under this system they provide a fine labor force, but they would not perhaps do so well on daily wages on a rubber

estate. They will, however, prove the backbone of that industry as soon as a system of payment by result can be introduced.

Javanese have a contract specifying that they shall fell jungle, make buildings, and drain at usual local rates. When on daily pay they receive from $3.92 to $5.60 monthly, according to their abilities.

The natives of the East Coast are Sulus, Bajaus, and Orang-Sungei. The only form of work these people attempt is the making of leaf covering for houses, and even this is chiefly carried on by their women folk.

THE KUDAT DISTRICT AND THE WEST COAST.

In the Kudat district tobacco is planted in five estates, one of which has commenced to plant rubber. The Langkon, worked for many years as a tobacco estate, has now ceased to plant that product, and having been recently purchased by a rubber company, is being planted with Para rubber.

In this district the bulk of the work is done by imported indentured labor on the same terms as on the east coast. The Bajau does nothing, but the Dusuns of the district are industrious and can be relied on to work well for short periods at a time. Work on a rubber estate should prove congenial to them, and they will probably form the chief labor force of all rubber estates opened in the Kudat district.

The west coast is a well-populated country, with at least three hard-working races and three others of mixed qualities, but out of whom a very fair amount of work can be obtained with patience. The Tuaran Dusuns, the Papar and Putatan Dusuns, and the Lingkongan Kadyans may be put in the first class and the Bajaus, the Bisaiyahs, and the down country Murut in the second class. The Dusuns of Pandassan and Tempassuk and the semi-Chinese natives of Bundu are also industrious, but seem loth to leave their own country, where they are indeed well enough off.

There are three rubber estates now opened on the west coast, and all these are situated in the neighborhood of Beaufort. The first opened were the Beaufort and the Woodford estates. Some 4 miles down the Padas River, on the Beaufort-Weston Railway line, is another estate. All these properties are connected with the port of Jesselton by the Beaufort-Jesselton Railway. These three estates have ample command of free labor. On one estate from October 1 to December 31, three months, the rainfall was 51.39 inches, which seriously interfered with the operations. Some of the Para rubber trees planted there in March, 1906, have now attained a girth of over 9 inches 3 feet from the ground, and are from 25 to 30 feet high.

The following are about the rates now being paid for contract work on rubber estates at Beaufort per acre: Jungle felling, $1.68 to $3.36; jungle felling, lopping, stacking, and burning clean, $5.60 to $7.28; if holding be also included the rates would be $7.84 to $8.40.

THE INTERIOR.

In the interior there are two estates, both of which were opened for tobacco, and one of them still plants this product in addition to Para rubber; the other plants Para rubber only, tobacco having been abandoned after one year's trial. One of these estates is 5 miles by cart road and the other 12 miles by bridle path from the present Tenom terminus of the Jesselton-Tenom Railway.

On these estates the greater part of the labor force is indentured Chinese and Japanese, but it is also supplemented by Tuaran Dusuns, Papar Dusuns, and Bajaus. The Murut is also of considerable use to estates, but, like the Kudat Dusuns, he will not work for more than a fortnight at a stretch.

The Kaningau Muruts and the Tambunan Dusuns are very hard workers, and the villages of the latter are thickly populated, but they, like the Tempassuk and Bundu people, are not fond of leaving their districts. Some day they may be found a useful labor asset.

Indentured labor is, if anything, cheaper than free labor, if the original brokerage and the losses by death and desertion are not taken into account. The great point in favor of this form of labor, and the one which makes it essential to tobacco estates, is that it is absolutely reliable.

RUBBER IN DUTCH TERRITORY.

According to a Far Eastern journal, rubber growing and its possibilities begin to attract attention in Holland. Two companies in that line of cultivation have just been floated there. One of them, with a capital of $94,000, aims at planting in Netherlands India, the other will set to work in Siak, a district in East Sumatra. This latter company is capitalized at $80,400.

KONGO FREE STATE.

NO INCREASE IN OUTPUT—PLANTATIONS FOR CONTINUING SUPPLY.

Consul-General James A. Smith, writing from Boma, gives the following comparisons of rubber production in the Kongo Free State with that of other countries:

The most recent figures which I have been able to obtain give the world's production of rubber for the season 1905–6 as 68,000 metric tons (metric ton=2,204.6 pounds), in which Brazil was easily first with 41,000 tons. Bolivia, Central America, and Mexico gave a combined total of 1,800 tons, Africa 23,400 tons, and the balance came from Asia and the East Indies. Of the amount obtained in Africa the Kongo Free State gave the largest quantity, with a production of 4,500 tons, French Guinea 1,500 tons, Angola 1,250, and the Gold Coast 1,000 tons. These figures are for the fiscal year ending June 30.

The Kongo Free State is producing and exporting a trifle over 4,800 metric tons of rubber annually. For the calendar years 1904, 1905, and 1906 the exports were 4,830, 4,861, and 4,848 tons, respectively, valued at $8,491,341, $8,444,889, and $9,358,436.

For 1907 the figures are not as yet at hand, but I have it on good authority that they will vary but little from those of the preceding years in the quantity produced. The market, however, has been less active during the closing months of the year, and the average price received during 1907 will doubtless show a decided falling off from the exceptionally high prices of 1906. Various causes are assigned for this. A steady increase in world's production, and, recently, of stocks on hand; the monetary crisis in the United States; the difficulties in which a large number of automobile manufacturers have become involved through overproduction, with the consequent lessen-

ing of the demand from this industry, one of the largest consumers of rubber, are a few of the reasons given.

COMPETITION OF GUAYULE—TAPPING ORDER.

One authority informs me that the large production of Mexican guayule rubber was the basic factor in the recent sharp decline in price, and, in his opinion, early recovery to the high level of the past three years was not probable, owing to the unusually large output by improved machinery of the Mexican product, which was of good quality and practically inexhaustible. A Brussels paper published recently a résumé of an article by a German authority in which quite the contrary opinion was expressed, it being stated that the hopes entertained as regards the guayule rubber had not been realized.

While the annual exportation from the Kongo has shown no diminution during the past few years, there is no question but that in many sections of the State the supply of wild rubber has rapidly diminished and in a large section of territory is practically exhausted. This condition, it is said, is in a large measure due to the ruthless cutting of the vines and trees by the native gatherers, a method which insures a quicker and more copious flow of the latex, but which entirely destroys the plant.

The law provides that the rubber must be gathered by means of incision of the vine or tree, thus preserving them for future supply, but in practice it is impossible, except in a small way, to control and enforce this wise provision over the immense expanse of territory producing rubber.

GOVERNMENT REQUIREMENT FOR REPLANTING.

To counterbalance this continual lessening of the supply of wild rubber the State has, with admirable foresight, enacted laws, obligatory alike upon its own agents and the concessionary companies, providing for the replanting of vines and trees, the number of plants corresponding with the quantity produced. Thus, at present, for every ton of rubber gathered the producer must lay out 500 young plants. How far the terms of this law are being strictly adhered to I can not say, but at all of the State posts visited during my recent trip to the Upper Kongo I found in the immediate vicinity plantations of from 125 to 200 acres laid out, and the young plants appeared to be in most cases in a flourishing condition.

It has been proved by experiment that the variety of rubber tree known as the "Funtumia Elastica" thrives better under cultivation here and gives much quicker results than the various varieties of vine rubber. The quality is excellent, and the young trees become paying producers in about 7 years. Ordinarily fully double this time is required before the vine yields in sufficient quantity to be profitable. On none of the plantations I visited had the oldest trees been laid out more than three or four years, and some time must necessarily elapse, therefore, before definite results will be obtained.

PLANTATION STATISTICS.

At present it is estimated that fully 13,000,000 plants have been set out capable of producing within a few years, and at a low estimate, 650 tons annually. Independently of this successive planting *the State has* established three grand centers of rubber cultivation,

each of 250,000 acres. These centers have been located in the Mayumbe district, near Banza (Lower Kongo); in the Ubangi district, near the post of Duma, and in the Lualaba-Kasai, between the posts of Katako-Kombe and Lodja, in the forests of the upper Lukenie. A calculation made of the probable production of these centers alone shows that one-third of the area allotted, or 250,000 acres, will be planted during the next six years, with an average of 260 plants to the acre, or a total of 65,000,000 plants, yielding, at a low estimate, 50 grams each, of 3,250 metric tons annually.

When the entire area of 750,000 acres provided for is planted, the yield after six years is expected to be 9,750 tons annually, or nearly double the present production, and this without calculating the 13,000,000 trees already started, nor the number constantly being planted under the terms of the law. The carrying out of these undertakings necessarily involves much time and labor, but if successfully pushed to completion the danger of ultimate exhaustion of the supply would appear to be entirely obviated. Certainly, under no other conditions can the supply, nothwithstanding the richness of some sections in wild rubber, be permanently counted on.

MEXICO.

GUAYULE RUBBER PLANT BEING EXHAUSTED FOR ELASTIC SUBSTANCE.

Consul Clarence A. Miller, of Matamoras, quotes a Mexican prediction that, unless something is done by the caucho rubber factory interests, guayule will be exterminated in Mexico in less than five years. The statement continues:

Many caucho factories have been profitably established, one of which, with a capital of $12,000, in one year produced $700,000 worth of caucho rubber.

A species of guayule produced abundantly in Chihuahua and Coahuila gives 10 per cent pure caucho. Ten tons of the guayule, roots and all, makes 1 ton of caucho, which sells for a trifle over $2,000, the guayule costing about $100. Good profits are made when only 4 per cent is obtained. The residue which most producers throw away has been found to contain a splendid grade of caucho, containing as much as 4 per cent, and for this reason a German method has been introduced which has proved to be superior to others. The Indians formerly used a very primitive method, which consisted of grinding the plant between two stones under a stream of water in order to separate the elastic material for the manufacture of balls. The children also used the plant for chewing gum.

BRITISH INDIA.

TAPPING OF TREES ON GOVERNMENT PLANTATIONS IN BENGAL AND ASSAM.

Consul-General William H. Michael, of Calcutta, finds that, according to the official report, the working of the government rubber plantations in the Kamrup and Darrang divisions of the forest department in Eastern Bengal and Assam during the year ending June, 1907, yielded the following results:

In the Kulsi plantation in Kamrup 66 acres were worked over, 3,981 trees were tapped, and 2,708 pounds of rubber were obtained,

the yield of rubber averaging about two-thirds of a pound per tree. Practically the whole of the year's crop was taken by a Calcutta firm at 90 cents per pound, the net profit, after deducting cost of tapping and harvesting, working out at 79 cents per pound on the year's crop.

On the Chauduar and Bamuni Hill plantation, in Darrang, 422 acres were worked over, 5,963 trees were tapped, and 6,962 pounds of rubber were obtained, the yield averaging 16.5 pounds per acre, against 25.6 pounds in 1905–6, the decline being entirely due to the unfavorable season. Of the total crop, 6,923 pounds of rubber were sold locally at $6,358, or 90 cents per pound, giving an average net profit of 68 cents per pound after deducting cost of tapping and collecting.

MANUFACTURES IN ITALY.

FIELD FOR AMERICAN STOCK—NATURE OF THE COMPETITION.

Consul James E. Dunning, of Milan, in answer to an American inquiry forwards the following report, made by Clerk Siersdorfer of his post, on the Italian rubber-goods trade:

There seems to be a good opportunity for the American manufacturer of rubber articles to place his stock in Italy. There are about ten native manufacturers who supply a small part of the general demand for industrial articles. The Italian demand for this stock is comparatively small at present, and has always been so, on account of it being considered a luxury in Italy and only the richer class have been able to buy it. Every other cheaper material has been substituted for rubber when possible. Therefore rubber goods are not as universally used at present in Italy as, for example, in the United States, although the demand is increasing with the Kingdom's general progress.

Italy will probably import from now on not less than $3,000,000 worth of rubber goods annually. The amount depends on the success of Italian factories to turn out stock able to compete in price with that imported. They are making strong efforts to do so at present, but have not as yet succeeded in decreasing imports, which, on the contrary, are steadily increasing, as is shown by the following table of Italy's rubber goods imports in recent years, in tons:

Countries.	1906.	1905.	1904.	1903.	1902.
Germany	431	347	237	266	180
France	389	252	172	114	80
Great Britain	160	112	90	85	67
Switzerland	29	14	19	12	13
Other countries	111	96	65	76	68
Total	1,120	821	583	553	426

GERMAN LEADERSHIP—OVERSHOE TRADE.

As will be noticed by the statistics, the largest amount of stock is imported from Germany, which trade is constantly increasing. The imported German stock is the same as that manufactured in Italy, but German manufacturers successfully compete with Italian manufacturers by making their prices lower. The local market has not

arrived as yet at a state where it regards quality as essential. This time is not far off. Until then continental manufacturers will be kept busy selling to Italy their overstock. Italian manufacturers consider the Germans naturally their keenest competitors in the market and find that nearly every article turned out by them is offered by such firms at a lower price. As in practically all other lines, the German manufacturers have established agencies throughout Italy who offer stock on the ground to Italian buyers, letting them pay for it when convenient. The German firm always gets its money. Thus the American manufacturer would find the German to be his strongest and ablest competitor in this market.

Rubber overshoes have hitherto been largely imported into Italy, local makers being unable to conveniently manufacture them. Large quantities of American rubbers have been sold on this market, as well as German and English. Recently a local concern started their manufacture, the first attempt in Italy. It remains to be seen whether he can compete with foreign stock of this kind in his own market, which is doubtful. German manufacturers have the important advantage over Italians that they turn out stock in much larger quantities, as do American firms.

FRENCH AND ENGLISH SALES—ADVICE TO AMERICANS.

Italy's next most important source of rubber goods supply is France. Children's toys form the bulk of these imports. Italian manufacturers are beginning to manufacture this stock, but the French article is preferred on account of its superior finish and variety. German manufacturers make few efforts to compete with the French in this article. This is a good part of the trade for Americans to take hold of.

Great Britain is Italy's third largest source of supply. Waterproof clothes form the bulk of these imports. When buying stock of this kind the Italian purchaser generally asks for English makes, partly on account of their good quality and partly on account of their reputation.

The imports from Switzerland appearing in the table should really be accredited as coming from Germany, for the stock is generally bought from German firms by Swiss brokers and reshipped to Italy. This may be confirmed by the fact that there are practically no rubber manufacturers in Switzerland.

The American exporter may therefore perceive that the only real competitor in opening up a trade with this country would be the German manufacturer. Rubber goods bearing any foreign mark are generally preferred. Manufacturers of the United States can be assured that there is a promising field here. The increasing Italian demand and the inability of native firms to reduce imports should encourage the American trade.

WILLINGNESS TO IMPORT AMERICAN GOODS—ACTIVE DEMAND.

In regard to American export conditions the consulate can only repeat that the manufacturer should be as lenient as possible with the Italian importer. If the exporter can not conveniently establish an agency in Italy with an American at the head of it, the next best step is to appoint a representative. Catalogues, price lists, etc., should

be sent him. A list of general representatives ready to import American stock has already been forwarded to the Bureau of Manufactures, from which exporters can choose a representative by corresponding with a certain number of them.

To further impress upon the minds of the American exporters that there is a good opportunity for them in Italy, it may be said that in careful conferences with various important local importers of American goods they expressed to the consulate a strong desire to get in touch with American manufacturers, stating that they were convinced that good profit could be made in Italy.

Italy's imports of rubber goods amounted to $2,192,538 in 1906, an increase of $485,472 over those of 1905. The value of imports in 1900 was $602,174. During the first eleven months of 1907 imports amounted to $2,640,421, or 1,216 long tons, an increase of $573,714, or 173 long tons, over the same period of 1906. To these imports must be added 126,000 pair of rubbers, amounting to $132,533, an increase of 20,300 pairs, valued at $21,353, over the same period of 1906. The bulk of these rubbers came from the United States and Germany, each country exporting about the same quantity. This, together with the figures at the beginning of this report, show how the Italian demand is increasing. It is widely stated that it will continue to increase.

RAW RUBBER IMPORTS—LIMITED EXPORTS—DUTIES.

Italian imports of raw rubber increased from 766 tons in 1905 to 1,073 tons in 1906. During the first eleven months of 1907 the imports amounted to $2,277,641, or 944 long tons, a decrease of $314,108, and of 130 long tons, from the same period of 1906.

Italy is not entirely without exports of rubber goods, a small quantity going to Argentina and Spain. These exports show a slight increase. They are not to be considered important, as practically all the stock is imported by Italians in those countries who prefer to buy from home. It should not be inferred that Italy is in a favorable position to export.

Catalogues of native and German firms, stating prices, which are subject to special discount, etc., accompany this report. These catalogues will help to show the American manufacturer interested in placing his stock in Italy what he will have to compete with. [They will be loaned to the American trade by the Bureau of Manufactures.]

The duty on rubber articles entering Italy may be stated as follows:

Crude rubber, free; rubber sheets and articles of cut rubber sheets, $11.58 per 220 pounds; rubber cords, $14.47 per 220 pounds; rubber tubes and sheets combined with wire or metal gauze, $7.72 per 220 pounds; other articles of rubber, including those of hard rubber, but excluding those combined with textiles or metal, $9.65 per 220 pounds; rubber articles of any form combined with textiles, except gummed tissues in the piece and articles of apparel and traveling accessories, $11.58 per 220 pounds; rubber trimming, ribbons, and elastic tissues, $25.09 per 220 pounds; insulated electric wire and cables, $9.65 per 220 pounds.

FORESTS.

UTILIZATION OF PRODUCTS.

ASIATIC TURKEY.

CAUSE OF THEIR DISAPPEARANCE—KINDS OF TREES FOUND.

Consul Ernest L. Harris, of Smyrna, writes as follows concerning the depletion of the forests of Asia Minor and its effect on the country at large and on the market for lumber products:

The trees of which the forests of Asia Minor are composed are the fir, pine, cypress, cedar, juniper, birch, chestnut, oak, plane, poplar, linden, beech, elm, ash, and willow. The old forests have disappeared and the tendency of nature to prepare the soil for a second growth is being continually defeated. As no industry has ever laid claims, to any great extent at least, upon the forests of Asia Minor, their disappearance can be attributed only to the demand for firewood.

Fir and pine forests now exist in this country only on the high plateaus or mountain ranges, such as the Paphlagonian mountain range, which is located toward the shores of the Black Sea. In this region the rainfall is greater each year than in the vilayet of Smyrna. Beech, plane, and elm trees also thrive in this section, in the valleys and plains. In Armenia there are large forests of red beech, walnut, oak, and chestnut. There are said to be forests of large beech trees in the country back of Trebizond, at some distance from the coast, and in the Ak Dagh Mountains near Amasia. It is also said that there are forests of tall pines not far from Angora. Between Smyrna and Konia there are no forests of importance. The Tmolus Range is covered with fir and pine scrub, and the same is true, more or less, of the Salbaccus Range at Denizli. It is nothing but thicket or undergrowth, as far as I have seen, and is used chiefly in burning charcoal.

OTHER VARIETIES OF TREES.

The willow tree, which grows well in some parts of the country, especially near Angora, is to some degree protected from the inhabitants on account of the shade it affords in summer and because it grows rapidly and is supposed to act as a preventive against fever. The whiplike branches are often woven into beehives. The poplar is frequently found in large groves scattered about the countryside, and is used chiefly in constructing houses in the Turkish villages. The oriental plane tree is found all over Asia Minor, but seldom in groves. They usually stand alone along the roadways and serve the traveler as halfway stations, where he finds some protection from the summer sun and a fountain. These trees also add considerable to the scenery of the country. They grow to be several hundred years old, and often attain such size that shepherds have been known to cut huts in the trunks of the standing trees, and their

vitality is so great that they continue to live for years thereafter. The plane is also a favorite shade tree. Smyrna has none, but Constantinople and the little valleys leading away from the Bosphorus, as well as most cities and villages in the interior, have large numbers of them. The Turks are fond of having them in front of their cafés and in the yards of their mosques.

The oriental cypress is a stately tree, which grows to exceptional size in Turkey, and especially along the coast of Asia Minor. It is revered by the people and is planted in groves in every Turkish cemetery. These trees are an ornament to the country, and no Turkish landscape is complete without them. In the old cemetery of Smyrna the grove is several hundred years old, and an ancient stately cypress keeps watch over the tomb of Polycarp.

In various parts of this vilayet a certain kind of scrub oak flourishes, upon the leaves of which the gall wasp lays its eggs, These eggs become secreted in the cells of the plant, and after a time form excrescences the size of a berry, called gallnuts, from which a winged insect finally makes its way out and escapes. The nuts are green and white in color, and some 3,000 to 4,000 sacks are shipped to England, Germany, and Austria every year. Some gallnuts are exported to America for the purpose of making ink, but only small quantities are shipped from the port of Smyrna. In 1907 the value of the shipments to the United States was only $4,380.

CUTTING THE TIMBER—WASTE BY NOMADS AND SHEPHERDS.

In the opinion of experts the quality of the timber in Asia Minor is good. The State reserves to itself the control of the forests at all times, but there does not appear to be any system of forestry in this country, with the exception of a few experiment stations laid out near some of the railways which lead into Asia Minor. The peasants are permitted to chop and burn freely. A Government permit is necessary only in case timber is to be exported.

The owner of some forests near the headwaters of the Boli Su River, who holds a permit to export timber, has given me a description of the manner of obtaining lumber in that region. Along most of the rivers which flow into the Black Sea there are many primitive sawmills, only a few of which are equipped with steam engines. The logs are dragged down the mountain side by horses and oxen, and rafted down the Boli Su to the mills, where they are sawed into lumber for shipment to Constantinople or other pars of Turkey. Lumber is transported on the Black Sea usually in sailing vessels.

Peculiar wandering tribes, who in winter house themselves and their flocks in timber huts, have done considerable harm to the forests of Asia Minor, especially in the vilayet of Smyrna. In order to obtain the necessary logs, or poles, for building their huts, they help themselves to any unprotected timber in the neighborhood. Shepherds attending flocks are also wasteful of timber, building fires of whatever trees are at hand.

EFFECTS OF THE FOREST DEPLETION.

The disappearance of the forests in this country, especially in the vilayet of Smyrna, has been marked by greater degrees of heat and cold. The date palm has practically become extinct in these

parts. In the winter and spring there are usually floods, which are destructive to life, property, and crops. In the summer there is not sufficient moisture in the soil of many districts, for the reason that the rain passes away at once down woodless ravines, without being absorbed by the ground. As a result large tracts have become sterile. Creeks and brooks which formerly retained considerable water, even in the heat of summer, are now completely dried up a few weeks after the spring rains. These same creeks and brooks are becoming deeper each year by the process of floods, so that not only is the surface of the country greatly disfigured, but no bridges can be built strong enough to withstand the annual rush of waters. It thus becomes impossible to get the crops and fruits to market at the proper time.

Crop failures and famine in Asia Minor may therefore be traced to the lack of forests. The past year serves as a good example. The rains of January, 1907, were the heaviest known in this vilayet during several seasons. The floods everywhere in the Hermus and Meander valleys were greater than for forty years. Cold weather set in soon afterwards, and for three weeks the thermometer stood at 5° F. above zero. The unpicked orange crop, ripe at that time, was destroyed, and the effects are being felt this season by a great shortage in oranges. Nearly every pepper tree in this vilayet was killed. There is a grain famine throughout Asia Minor, and wheat and barley, ordinarily products of export from this vilayet, are not now allowed to be sent out of the country. In other words, a country which usually produces not only sufficient grain for its own use, but large quantities for export, is now compelled to purchase these products in the markets of other countries.

USES FOR WHICH TIMBER IS REQUIRED.

In the vilayet of Smyrna there can never be a lumber industry. The forests in the interior of the country can not supply the demand until railways have been built to them. The needs of Smyrna in this respect, and of the whole region known as the old Ionian Peninsula, are the opportunities of other countries which are in a position to supply the demand. In 1906 some $600,000 worth of lumber from Roumania, Austria, Norway, and America passed the Smyrna custom-house. The railways use considerable quantities of the up-country product for ties, etc., but the supply is limited. The Aidin Railway imports from Pensacola, Fla., lumber for building freight cars. The railway management has constructed large sheds for the purpose of perfectly seasoning this timber.

Wood torches are used to a great extent in the villages of the interior for house and street lighting. Petroleum and candles have not found their way very far into Asia Minor. In this country, where everything is primitive, wood takes the place of iron, especially in the case of wagons and agricultural implements. Basket weaving, as in some parts of Bohemia and Italy, is a favorite house industry. Nearly all the bridges in the country, apart from those belonging to the railways, are built of timber.

The demand for timber of every description in Smyrna may be briefly stated as follows: Boxes and cases for the fig and raisin industry, in season; hard-wood and other lumber for flooring; mahogany and walnut for furniture and cabinetmaking, picture frames, and wood ornaments. Many kitchen utensils are made of wood, and

the carts and even the wagons used throughout the country are usually made of imported lumber. The average size of all lumber imported is about 15 feet long, 3 inches thick, and 10 inches wide. Timber must be well seasoned in order to withstand the extremes of heat and cold common to this country. There are a few sawmills in Smyrna which make a business of sawing and planing imported lumber into the sizes desired by the local trade. All furniture, doors, windows, and parts thereof are made by hand. There will always be a good market in the vilayet of Smyrna for American lumber, especially that from the Southern States.

NICARAGUA.

GOVERNMENT CONCESSIONS FOR GATHERING TWO FOREST PRODUCTS.

Consul Frederick M. Ryder, of San Juan del Norte, reports that a contract has been entered into between the Nicaraguan Government and R. J. La Villebeuvre, a resident of Managua, which disposes of the gum of all "tuna" trees located in the national forests of the Republic. In reviewing the concession and the previous efforts to utilize this gum, the consul quotes Article I of the contract, which reads as follows:

> For the purpose of installing and developing a new industry in the country, the Government concedes to Mr. La Villebeuvre, his heirs, assigns, or associates, the exclusive privilege, for twenty years, of extracting and utilizing the gum of the tree generally known as the "tuna" or "gutapercha," on all national lands in the zones comprising the districts of Cabo Gracias á Dios and Prinzapolka, the Department of Jinotega, and that portion of Neuva Segovia situated east of eighty-sixth meridian, as designated on the Government map published in 1895.

The Government is to receive 2 cents for each kilo (2⅕ pounds) of gum extracted, whether it is disposed of in the country or exported. The concessionaire has the privilege of importing, free of all duties, during the life of the contract, such machinery, tools, chemicals, and everything that is necessary for the establishment and maintenance of the new enterprise. He may also transfer his concession to individuals or a syndicate for exploitation, but under no circumstances to a foreign Government.

DESCRIPTION OF THE ARTICLE.

The "tuna" belongs to the "balate" family and resembles the zapote tree, from which chicle is extracted. The species is indigenous to this locality, being particularly numerous in the Cabo Gracias section. It is similar in appearance to the native rubber tree, and the milk (or gum) is the same color and consistency as crude rubber, but is altogether lacking in resiliency.

Numerous analyses have been made for the purpose of ascertaining whether there was any field of usefulness for tuna gum, and considerable money has been spent in experimenting with the product by parties in this section, but there appeared to be no practical demand for the article. Periodical shipments of small quantities, presumably for experimental purposes, have been made from this consular district as far back as 1885, but at no time have exportations exceeded 5,000 pounds in one year, while the prices have fluctuated

between 7 and 25 cents per pound, there having been practically no market value for the product.

The fact that this concession was sought for and has been granted would seem to indicate that some field of usefulness has finally been discovered for the gum of the tuna tree, and should the product prove valuable and the demand extensive, the privileges granted in the recent contract with the Government should be of immense value to the concessionaire.

VALUABLE BARK OF CENTRAL AMERICAN TREE AND ITS USES.

The exclusive concession for gathering, manufacturing, and exporting fiber from the "majagua" trees in the national forests of Nicaragua has also been conceded by the Government to a former official.

The hibiscus tiliaceus, or the "majagua," as it is generally known by the natives, is very common on this coast, and is said to be equally numerous in other portions of the Republic. It attains a considerable size and produces a fiber of more than ordinary strength.

The fiber has been used by the native storekeepers, in the interior especially, instead of twine, and where a stronger cord or rope is required several strands are plaited together. It has been utilized by Indians and native ranchmen for years, in making lassos, halters, and ropes; in fact, wherever durability and strength have been the requisite features, a rope made from this product (even in its natural state) has invariably proved equal to almost any reasonable emergency.

Native boatmen on this coast recognize the tree as the "mahoe," and depend upon the fiber for making their tie-lines and anchor cables, with which necessities they are usually well provided, as the only expense incurred is the time consumed in making the rope, while imported manila cables are so expensive that the average boatman could not afford the luxury.

The wood of the tree is considered excellent for ship knees, being extremely tough and comparatively light in weight, and little difficulty is experienced in procuring the desired shape. The fiber lies just beneath the outer bark (which is quite thin, considering the size of the tree) and consists of several layers, which are easily separated by pounding and soaking the bark in water for a few hours. There is apparently an unlimited quantity in the Republic. Samples of the fiber have been forwarded [and may be seen at the Bureau of Manufactures, from whom the name of the concessionaire may also be secured].

KOREA.

NEW NATIONAL LAWS RESTRICTING THE CUTTING OF TIMBER.

Consul-General Thomas Sammons, of Seoul, advises that the new Korean forest laws are similar to those of Japan. He outlines their main points as follows:

The forests will be classified in four kinds, according to the status of their owners. These four classes are imperial, state, public, and private forests. The minister of agriculture, commerce, and industry may work out and order the preservation of such forests as may be necessary for the prevention of landslides, floods, and droughts. The

minister can also prohibit the cutting of forests the destruction of which would impair the scenic features of places of public resort or localities noted for scenic attractiveness.

With the exception of such limitations as the foregoing, the authorities are empowered to dispose of the state forests either by sale, transfer, or mortgage. When any private forests are brought under the "reserved forest act," the owner of them may demand recompense from the Government. The laws require that parties owning forests shall apply to the minister of agriculture, commerce, and industry for official recognition within one year under penalty of forfeiture to the state. Those having rights of afforestation, the felling of trees, or leases of forest lands which will continue valid after the enforcement of the new law, will also be required to secure recognition by the same minister within six months.

It is claimed that the denuding of watersheds in Korea, as well as in China, has resulted in serious injury to the country. In both these countries disastrous floods occur, and in the construction of railways it has been found from experience that exceptionally large bridge openings must be provided in order to prevent washouts. Following heavy rains agricultural areas are frequently covered with water.

The denuding of watersheds in Korea and elsewhere in the Orient results largely from the demand for fuel. As coal mines are opened, however, the demand for forest products will, it is believed, be materially diminished. Forest preservation and regulation will, it is hoped, increase the fuel supply and provide a perpetual supply of suitable material for timbering mines. At present extensive mining operations now being carried on in Korea by Americans depend on the available timber for successful exploitation. The mining interests, as represented by various nationalities are, therefore, concerned in the forestry regulations, in so far as they may affect this industry.

AUSTRALIA.

IMPORTANT DISCOVERY OF CAJUPUT OIL IN NEW SOUTH WALES.

Consul Orlando H. Baker reports from Sydney that it has recently been demonstrated that cajuput oil, supposed heretofore to be exclusively a product of Java, exists in one of the trees of New South Wales, Australia, known commonly as "ti-tree" (Melaleuca uncinata). The consul adds:

The oil exists in globules in the leaves and is easily extracted. Speaking of his discovery, a member of the Technological Museum of New South Wales says:

> Regarded as an oil, the ti-tree cajuput resembles the Java product, but its stearoptene or solid alcohol is a new substance not hitherto described or investigated. Nor does it agree with any known substance previously obtained from plants. It may be that this discovery will have profound importance. Eucalyptus oil has attained world-wide repute, and it is likely that the Australian cajuput will soon be recognized as a useful agent by medical men and chemists. Its effect upon humanity is expected to be beneficial in certain cases. Ti-trees of the variety Melaleuca uncinata are plentiful near Sydney. The leaves are tiny spikes, and there is a berrylike fruit.

CEMENT.

MANUFACTURE AND USE.

MEXICO.

GROWING DEMAND FOR USE IN CONSTRUCTION WORK IN THE REPUBLIC.

A few months ago, upon request from the Department of Commerce and Labor, the Department of State instructed the various consular officers to report on the cement industry and the machinery employed in its manufacture. Among the reports received the following from Consul-General A. L. M. Gottschalk, of Mexico City, covering the cement industry in the Republic, will be interesting to American manufacturers:

There is practically an unlimited future for the use of concrete as a building material in this city as well as in the other large cities of the Mexican Republic, especially for the hollow concrete block. There are, I am told, in the capital city, only some 300 houses built of concrete, but this comparatively small number is due to the fact that the material only began to find general acceptance with architects and builders a very short time ago, much prejudice having been felt against it owing to the fact that some years ago certain speculators undertook to launch upon the market concrete blocks of so poor a quality that they were universally condemned. This prejudice has, however, entirely disappeared. A very telling ocular demonstration of the strength and solidity of cement-block construction was afforded in this city in April, 1907, when an earthquake lasting two and one-half minutes, and causing a recorded sway of 60 centimeters in certain buildings in town, left utterly unscathed a residence building of concrete block, while countless numbers of neighboring houses were more or less damaged.

CRUDE METHODS OF LOCAL MAKERS—MOLDS FROM UNITED STATES.

There are more than twenty manufacturers of concrete blocks or ornamental work in this city alone. The methods in use among them are usually of the crudest, with the exception of two concerns which import American molds. The system generally in vogue is to have molds made of plaster of paris into which the cement is run, after which the mold is pried or chipped off. Many manufacturers make their molds of a sort of elastic glue, commonly called "cola," whose composition I could not ascertain, which permit them to turn out numbers of very artistic undercut or scrolled pieces.

The importation of fancy molds, which covers only a few years' time, and which, I am informed, has been almost exclusively from the United States, has not amounted to more than 1,500 Mexican pesos ($747 United States currency). A much greater number would of course be imported if our factories could turn out molds of the standard sizes in use in this country. As an example, the standard balustrade of balconies and cornices in the United States is between

15 and 18 inches high, with a diameter of 5 inches; in Mexico these balustrades are invariably 60 centimeters in height (approximately 24 inches). It may, however, be said that ornamental cement work is gradually supplanting the old-fashioned carved stone work which characterized all Mexican buildings of any pretensions until comparatively recently.

Imported molds for cement blocks are practically all of American make, though there is an occasional French or German one to be seen. The chief difficulty which works against the American manufacturer of cement block molds who desires to export these to Mexico, is the fact that American molds are never made to conform in size to the standard (metric) measurements in use by Mexican architects and builders. Moreover the Mexican architect, still bound by the traditions of old Spanish engineering, is much inclined to believe that a wall less than 16 inches thick can hardly be of sufficient strength to stand. Up to September, 1907, about $50,000 United States currency worth of these molds had been imported, chiefly for use in this city and vicinity. One concern here has a complete set of American equipment in this line, said to be worth over $24,000 United States currency. Most of the importations are manufactured at South Bend, Ind., by the Ideal Concrete Machinery Company.

VALUE OF AN OBJECT LESSON.

Mexican builders are beginning to open their eyes to the fact that much of the former tradition may as well be done away with. An American firm in this city has been building a number of "demonstrative walls" of the usual Mexican thicknesses, by using blocks of standard American sizes and smaller "veneer blocks" to fill out to the thickness required by local custom. Some Mexican engineers have been persuaded; others have objected to weakness in the joints between the solid wall and the veneer blocks.

The fact remains that much of the old prejudice is gradually dying. Recently there was held here a meeting of prominent engineers, to which an invitation was issued embracing all builders and architects, for the purpose of studying building material suitable to the City of Mexico, which is built upon what was once the bottom of the old lake of Tezcoco, and where the "settling" of numerous heavy public buildings is beginning to give some concern. I am given the figures five tons to the square surface meter as being the maximum weight that the soil of the city, generally speaking, will stand.

One of the strongest arguments used by the advocates of cement blocks to supplant the building materials formerly in general use here (heavy lava rock; "tezontle," a sort of pumice; or the native burnt bricks called locally "tabiques," in connection with ordinary bricks brought from the United States) is that the native mason will not usually lay more than 400 of the native brick in one day, whereas in the same time he can lay 100 concrete blocks of standard size, which means about two and a half times as much in actual cubic measurement. These points, together with the fireproof qualities and lesser weight of the cement (hollow) block walls, are daily being brought more and more to the attention of builders and architects.

SEWER PIPES, SIDEWALKS, AND ROOFING—REINFORCED CONCRETE.

An important item in recent importations of concrete machinery *from the United States* has been sewer-pipe molds, made by a firm

of Minneapolis, Minn. I am told that importations of this article to the value of $9,960 United States currency have entered the country within the year.

Concrete sidewalks are in use in practically every large city in the Republic, and the older-fashioned stone-flag sidewalks are gradually being relegated to such towns as are still unfortunate enough not to possess railroad transportation for the carrying of cement.

Concrete roofing, made in slabs 1½ feet by 3, 4 inches thick and ribbed, and joined together by asphalt joints, are made here by the firm of J. G. Zwicker & Co., under a United States and Mexico patent. These have been used very satisfactorily on roofing one or two public buildings and several private residences of the wealthy.

It is only quite recently that the system of reinforced or "armored" concrete for buildings has been taken up by Mexican architects. Up to the present time there are but few examples of such buildings in this city, one or two of them large dry-goods stores. The systems best known are the Kahn (of the United States) and the Hennebique. Four such new buildings are about being completed.

Steel bars for reinforcing have been imported, but only in small quantities thus far, from the United States. Some expanded metal of English manufacture and some American rib metal have also been imported. Quite recently a fairly heavy tonnage of corrugated bars and similar material has been ordered by the Mexican Government from two American concerns.

MANUFACTURING PLANTS—DOMESTIC SUPPLY AND IMPORTS.

There are at present three cement manufacturing plants in the Mexican Republic. One is that owned and controlled by the Compañía Bancaria de Obras y Bienes Raíces, situated at Dublin, State of Hidalgo, and only a short distance from this city. A much smaller plant is that of Arenzana & Co., on the outskirts of the capital city. The third is the Monterey Steel and Iron Company, of Monterey, State of Nuevo Leon, which sells some of its product in this city. The Dublin plant turns out an excellent cement of the Portland type, which is said by persons competent to judge to be quite the equal of the imported article. It has a capacity of some 1,000 barrels per month, but expensive and radical enlargements are under way there which will bring the factory's output, or at least its working capacity, up to 1,000 barrels per day. The so-called "Forsythe" process, which is in general use in the United States for softening limestone where limestone is used in cement manufacture, will be in operation there.

There are fairly extensive cement beds in the neighboring State of Morelos, but just how extensive or how productive it is difficult to determine. The domestic cement supply seems to be somewhat jealously guarded by the persons interested. I was assured, during a tour of the State of Oxaca, that extensive and valuable, although unexploited, cement beds were to be found there.

The exact figures of Mexican importations of cement from abroad are somewhat difficult to determine, the article, "cement," being usually included in the Government statistics with others, such as lime, carbonate of lime, etc. Germany appears to have been the chief source of importations, probably owing to her cheap ocean freights. One American concern sends large consignments to Mexico regularly; but the German market seems on the whole to be considered cheaper

and better. I have also heard of large consignments coming occasionally from Belgium and England.

I am told that approximately 600,000 barrels was the total importation of the year ended June 30, 1905; that the next year's figures showed 750,000, and that in 1906–7 the importations rose to above 1,000,000 barrels. The Mexican Government, during the last-mentioned period, I am told, contracted with German firms for over 100,000 barrels; with an English syndicate for some 40,000, and with an American firm for 20,000.

FUTURE OF CONCRETE IN MEXICO.

The following paragraph is from one of the leading houses in the concrete manufacturing business regarding the future of concrete in Mexico:

With reference to the future of concrete construction, whether it be either in the form of concrete block or reinforced concrete construction, it is very well seen that this new class of building material and construction is in its infancy, but it is very evident that it is going to take both time and patience in order to gain the confidence of both engineers and architects and builders with reference to the strength and stability of both concrete blocks and reinforced construction. As the fact must not be overlooked of existing conditions, such as earthquakes, which are very common in this country; but as a whole it is the writer's belief that one year from to-day there will be 50 per cent more concrete used than there is at the present time.

GERMANY.

CONDITION OF THE LOCAL MARKET—ACTIVITY IN RURAL BUILDING.

Consul Carl Bailey Hurst, of Plauen, states that in close relation to the importation and sale in Germany of concrete machinery is the condition of the local cement market. He reviews the cement trade in the Empire for the past year:

Statistics recently published here afford a fair indication of the use of cement in this country. The year 1906 was characterized in the German cement market as one of strong development. The output of cement in 1907 did not fall behind, although some anticipated a repetition of the same progress that was manifested the year before. The complaint from some works that business did not attain the high mark expected is not altogether justified. In fact, most localities making cement were busily engaged, with the exception of some in eastern Germany.

The profits of the important cement companies in 1907 were on a par with those of the previous year. For the 28 largest concerns, representing a capital of $2,380,000, the dividends will probably be nearly 12 per cent, a fraction higher than in 1906. The reason that the manufacture of cement did not show greater activity during the past year was a duller and more irregular season in building enterprises. Particularly in the large cities fewer buildings were erected, but, on the other hand, there were more houses put up in the outlying parts of the country, with the result that the major share of the business, which had hitherto flowed to the great towns, was deflected to the rural districts and there scattered.

It is worth calling attention again to the fact that concrete is coming more into favor in Germany as a building material and

that American machines for making concrete blocks and cement brick should have a wider chance of introduction.

HEAVY IMPORTATIONS—REDUCED EXPORTATIONS.

The whole German industry was affected by the heavier import of foreign cement, three times more being imported in 1907 than in 1901. Belgian competition had already been keenly felt in 1906 and, although there was a slackening from this source, still the 232,981 long tons of cement placed on the German market by Belgium, Austria, and France, together with other countries, were sufficient to lessen the home trade. The exact amounts imported into Germany during the first eleven months of 1907 were as follows: From Belgium, 122,680 long tons, in comparison with 128,400 tons during the corresponding period of 1906; from Austria, 33,265 long tons, in comparison to 35,622 in 1906; from France, 25,393 long tons, in contrast to 20,487 tons for the same period in the preceding year.

During the time that the import increased, the export of German cement fell somewhat behind, 646,298 long tons being exported during the first eleven months of 1907, against 672,248 tons exported in 1906. The best customer for German cement during 1906 was the United States, followed by the Netherlands. The export figures for 1907 show a remarkable change. During the first eleven months of 1907 the United States bought 78,726 long tons of cement made in Germany, in contrast to 137,425 tons during the corresponding period of the preceding year. The Netherlands took 94,851 long tons during January–November, 1907, and 105,798 in 1906. The decrease in the export to the United States is thus markedly noticeable. Central and South America are increasing buyers of German cement, Brazil alone having imported, during the first eleven months of 1907, 64,647 long tons.

UNITED STATES.

SLIGHT GAIN IN PORTLAND CEMENT PRODUCTION LAST YEAR.

Returns to the United States Geological Survey representing 95 per cent of the Portland-cement production of the United States for the year 1907 indicate that the total output of Portland cement in the last calendar year was approximately 48,000,000 barrels, as compared with 46,463,424 barrels in 1906 and 35,258,812 barrels in 1905. The increase in production in 1907 over 1906 was below the average of previous annual gains, which is said to have been the result of general business depression in the latter part of the year.

EXPOSITIONS.

INTERNATIONAL DISPLAYS.

NORWAY.

THE SCANDINAVIAN FISHERIES EXHIBITION AT TRONDHJEM.

Minister H. H. D. Peirce reports from Christiania that he has received from the chief of the Bureau of Information on Trade and Industry in Norway the following account of the Scandinavian Fisheries Exposition to be held in Trondhjem in July and August of the current year, concerning which reference has already been made in Consular and Trade Reports:

In July and August, 1908, the city of Trondhjem will be a rendezvous of more than ordinary interest. On July 1 an exhibition will be opened there which will show the position held by the fishing trade at the present time, both in the Scandinavian countries and in Iceland and the Färoe Islands.

There is a considerable difference between Danish, Swedish, and Norwegian fishing, this being determined, in a great measure, by the peculiar natural conditions under which the trade is carried on. The sea round the Danish coasts is more or less shallow, and thus furnishes the conditions necessary for the existence of a number of fish belonging to the flounder species, of which the plaice (Pleuronectes platessa) in particular is caught in such quantities as to be of great national economic importance. Sweden, as regards her fisheries, occupies an intermediate position, so to speak, as compared with Denmark and Norway. On the Swedish coast, too, various kinds of flat fish are caught in considerable quantities, but their yield can not be compared with that of the herring fisheries on the west coast of Sweden.

Round the coast of Norway and in the Norwegian fjords there is little shallow water to be found, and therefore cod and herring are the principal objects of the fisheries. In 1906 the yield of the Norwegian cod fisheries was 47,000,000 fish, representing in value about 16,400,000 kroner (krone=26.8 cents). Only the large coast fisheries are included in this computation and not the fjord fishing for the supply of daily needs. The yield of the Norwegian herring fisheries in 1906 was 1,076,000 hectoliters (hectoliter=26.4 gallons), amounting in value to about 7,500,000 kroner. According to the official statistics the total exportation of products of the Norwegian fisheries and whaling in 1906 amounted in value to about 66,700,000 kroner, or about $17,875,600.

WHAT CAN BE SEEN AT TRONDHJEM.

The visitor to the exhibition at Trondhjem will be able to make himself acquainted with the characteristic features of the fisheries in the Scandinavian countries, and those who take a special interest in the matter will find there numerous instructive details with regard to vessels, engines, and motors for fishing purposes, fishermen's implements and equipment, the preparation of the products, their conveyance and sale, all kinds of sport fishing, etc.

The historically famous town of Trondhjem, which in 1897 celebrated its 900th anniversary, forms the setting to the exhibition. For many years Trondhjem was the residence of the Norwegian kings, and the political center of the country. It contains the most beautiful of Norwegian monuments, the cathedral—a work of which Norwegians may be proud. As the arch-episcopal see and chapter, the town was for centuries the intellectual focus of the country. The archbishop's spiritual duties did not prevent him, however, from occupying himself with economic matters, and he employed fishermen at most of the large fishing stations, some of which he owned himself. A considerable portion

of his income consisted of fish products; and there were times during which the archbishop, in addition to being the primate of the Norwegan church, was also the largest fish merchant in the Kingdom.

Trondhjem is now, as in olden times, a natural center for fishing and the sale of the products. Its trade in fresh fish in particular has of late years increased greatly. Owing to its position in the midst of the fishing districts it is peculiarly well adapted for the coming exhibition, at which there will be a large number of exhibitors. The beautiful surrounding scenery and the pleasant climate will also contribute toward the bringing of travelers from all countries to the town.

BELGIUM.

IMPORTANCE OF THE WORLD'S FAIR AT BRUSSELS.

Consul-General Henry W. Diederich, writing from Antwerp, calls attention to the importance of thorough American representation at the official Belgian International Exposition to be held in Brussels in 1910, concerning which he says:

The history of the exhibitions held at Antwerp in 1885 and 1894, Brussels in 1897, and Liege in 1905, shows that they have been eminently successful. The manufacturers and merchants of the United States should make displays at the 1910 exposition in a manner worthy the progress and industrial development of the Republic. Americans and others who took an active part in the previous exhibitions say that the meager show made by our people did far more harm than good to American industries. When such a national affair has been officially recognized the general public feel justified in expecting something great from an extensive manufacturing country like the United States, and when they see instead a display scarcely suitable for a country fair the effect is both disappointing and prejudicial. American sections at previous expositions were insignificant compared to those of France, Germany, Holland, Austria, Italy, Japan, and Canada.

A fair array of the natural resources and industries of the United States indicating the progress of its people in the various arts of civilized life might bring an ample reward for all the sacrifice of time and money. A few hours' careful study of American products and a close survey of them by actual sight would do more for the extension of the American trade abroad than a ton of illustrated journals and pamphlets. As with all expositions, the effect of this one at Brussels will be a wider diffusion of knowledge and a spirit of deeper rivalry between individuals and nations. A higher standard of excellence will be set up in every human activity, from the simplest to the grandest, and improvements will be shown of many processes, from the plainest manipulations of raw material up to the application of chemistry and other sciences in mining and manufacture. Beyond all doubt a properly organized and financially well-supported participation in this exposition would be attended with great advantage.

RESULTS FROM THE LIEGE EXPOSITION.

A letter from an American mechanical engineer located in Antwerp to the Bureau of Manufactures states that there were 85 American exhibitors of machine tools at the Liege exposition in 1905, 65 of whom obtained awards. He points out the urgency of excellent American representation at the Brussels exposition in 1910. The letter adds that the large display made by Canada at Liege caused

an increase of its foreign business by several millions of dollars. He is informed that Canada is to make a still larger display at Brussels. Great Britain, Germany, France, Italy, Austria-Hungary, and oriental countries have applied for large spaces.

JAPAN.

EXEMPTION OF DUTY ON ARTICLES IMPORTED FOR EXHIBITION.

Consul-General Henry B. Miller, of Yokohama, reports that the law relating to the exemption from duty of foreign goods to be exhibited in the Grand Exposition of Japan, to be held at Tokyo in 1912, was gazetted on February 28, a summary of which is as follows:

It stipulates that foreign goods to be exhibited in the exposition are exempt from import and consumption duties, and that those to be for the purpose of "show" or theatrical performance in the exposition ground are also entitled to the same privilege, provided that both duties are imposed on them in any of the following cases:

(1) When goods are removed outside the exposition compound without being returned abroad; (2) when they are not returned abroad within four months from the date of the closing of the exposition; (3) when they are sold on the spot in the exposition or consumed for business purposes.

When proper security in cash or public bonds is deposited for import and consumption duties the actions mentioned in (1) and (2) may be carried on within the limit of the amount of deposit before the payment of duties. When the payment of duties is not made within four months from the date of the closing of the exposition this deposit is to be utilized by the customs authorities as duties. The following foreign goods are also exempt from both duties: (1) Articles and materials to be used for foreign government buildings in the exposition compound and exhibits of foreign governments; (2) private effects of foreign officials dispatched to Japan in connection with the exhibition; (3) articles and materials to be used for arranging or decorating exhibits; (4) articles to be distributed gratis in the exposition compound as advertisements or samples. The date of the enforcement of the law is to be fixed by a later Imperial ordinance.

CHINA.

MANUFACTURES AND MACHINERY FAIR FOR SHANGHAI.

Deputy Consul-General W. Roderick Dorsey reports that it is proposed to hold an exhibition in Shanghai during 1909, under the auspices of the China Association, provided sufficient support can be obtained, details of which follow:

The fair will be called the Shanghai International Exhibition and will be confined to staple manufactures and machinery. It is proposed to raise the necessary funds by subscriptions to a guaranty fund. Subscriptions will be solicited from Shanghai merchants and it is hoped that manufacturers in foreign countries, realizing the advantages that may accrue to their products through this medium, will be prepared to subscribe to such a fund.

The whole project is in an embryonic state and it is impossible at the present time to secure particulars of space available for each exhibit or the terms on which space can be rented. Seventy acres of land have been secured in a suitable situation and as soon as practicable plans for the buildings will be made.

There is no prospectus or other advertising matter in circulation at present, but American manufacturers and exporters interested in the project can have this sent to them as soon as it is issued by addressing Mr. L. E. Canning, secretary China Association, No. 6 Peking road, Shanghai, China.

RUSSIA.

MOTOR TRADE EXHIBITION AT MOSCOW.

Consul Samuel Smith sends the information that an international exhibition of automobiles, motor boats, bicycles, and sporting goods is to be held at Moscow from May 16 to June 2, 1908, under the auspices of the local Russian Automobile Club. All inquiries pertaining to this exhibition are to be addressed to the Russian Automobile Club, Moscow branch, Tverskaya street, house Hirschmann, Moscow, Russia.

THE ST. PETERSBURG BUILDING EXPOSITION.

Additional information concerning the International Arts and Building Exposition to be held in St. Petersburg this year is furnished by Ambassador Baron Rosen, who states that American engineers, architects, and manufacturers are invited to take part, as it is very much desired to have a special section of American products. The exposition will include the following sections: (1) Building material; (2) locks, cabinetwork, wainscoting, etc.; (3) sanitation and heating equipment; (4) fire prevention; (5) mechanical devices, such as electric motors and elevators; (6) exterior and interior decoration of houses; (7) literature and instruction, including instruments, etc.

AUSTRIA-HUNGARY.

FIRST INTERNATIONAL EXPOSITION OF THE CHASE.

The Department of State is in receipt of a note from the Austro-Hungarian ambassador at Washington inclosing programme of the First International Exposition of the Chase, to be held at Vienna from May 15 to October 15, 1910. This exposition will include every product of agriculture, trade, and industry in any way connected with the sport. Ambassador Hengelmüller requests that private and public institutions interested be informed of the exposition and invited to take part therein.

MISCELLANEOUS.

TARIFF CHANGES.

JAPAN.

FORTHCOMING INCREASE OF CERTAIN DUTIES.

According to information received by the British Foreign Office the Japanese import duties on a number of articles are to be increased from September 1 next, as shown in the subjoined statement (equivalents being yen=$0.498; kin=1.32277 pounds; liter=1.05668 quarts):

Tariff No.	Article.	Present rate.	Rate from Sept. 1, 1908.
50	Fruit juice (sugared) and sirup	45% ad. val.	60% ad. val.
51	Grape sugar, malt sugar, and the like ..100 kins..	7.25 yen.	9.25 yen.
53	Honey	50% ad. val.	60% ad. val.
55	Confectionery, fancy biscuits, and other cakes ..100 kins..	a20.00 yen.	a26.00 yen.
56	Jam, fruit jelly, and the like ..100 kins..	a13.00 yen.	a17.00 yen.
57	Vegetables and fruits preserved with sugar, molasses, sirup, or honey, ..100 kins..	a8.00 yen.	a10.50 yen.
58	Saké ..liter..	.15 yen.	.17 yen.
59	Chinese liquors, fermented ..liter..	.15 yen.	.17 yen.
60	Beer, ale, porter, and stout ..liter..	.10 yen.	.12 yen.
63	All other alcoholic liquors (except wines):b		
	In bottles ..liter..	.90 yen.	1.10 yen.
	In other receptacles ..liter..	.50 yen.	.60 yen.
64	Alcohol ..liter..	.65 yen.	.73 yen.
137	Alcohol, denatured ..liter..	.65 yen.	.73 yen.
153	Alcoholic medicinal preparations (excluding tincture of opium) liter.	.65 yen.	.73 yen.

a Including the weight of the receptacles.
b Alcoholic liquors, containing more than 50 per cent by volume of pure alcohol, specific gravity 0.7947 at 15° C., are subject to an additional duty at the rate of 1 sen per liter for every additional 1 per cent of pure alcohol.

INCREASE OF CONSUMPTION TAX ON SUGAR.

The consumption tax on sugar (which is levied on both home-produced and imported sugar) has been increased with effect from February 22 last, and the former and new rates of this consumption tax are shown in the following statement:

Kinds of sugar.	Former.	Present.
	Yen.	*Yen.*
Sugar, Class I (below No. 8, Dutch standard), and molasses ..100 kins..	2.00	3.00
Sugar, Class II (from No. 8 to No. 15, exclusive, Dutch standard) ..100 kins..	4.40	5.50
Sugar, Class III (from No. 15 to No. 20, inclusive, Dutch standard) ..100 kins..	6.50	8.50
Sugar, Class IV (above No. 20, Dutch standard), and candy ..100 kins..	7.50	10.00

SPAIN.

CERTIFICATES OF ORIGIN NO LONGER REQUIRED ON CERTAIN ARTICLES.

Minister William Miller Collier reports from Madrid, under date of March 4, that according to the royal order of February 18, cer-

tificates of origin will no longer be required upon the importation of articles mentioned in Nos. 28, 29, 43, 44, 193, 194, 410, 412, and 681 of the Spanish tariff.

The articles affected are crystal and half-crystal glass, whether or not colored, engraved, cut, or ornamented; tableware and toilet articles of porcelain and earthenware, whether or not painted, stamped or otherwise ornamented, in one or more colors; varnishes; blank books, copying books, envelopes, writing paper, and other kinds of prepared paper, not specially mentioned in the tariff; and waterproofed articles of apparel.

TURKEY.

RESTORATION OF THE FULL RATE ON WHEAT AND FLOUR.

Consul-General Edward H. Ozmun, of Constantinople, reports, under date of February 26, that the temporary regulations of the Turkish Government, which prohibited the export of wheat and suspended the entire duty of 11 per cent on grain imported into Constantinople and reduced the duty of 6 per cent on imported flour, have been rescinded. From February 14, in the provinces, and from March 14, in Constantinople, the usual duty of 11 per cent ad valorem on grain and flour will be collected and the export of grain will be permitted.

NETHERLANDS.

TARIFF CLASSIFICATION OF MAIZE FLAKES.

The British Board of Trade Journal publishes a resolution of the Dutch Minister of Finance, dated February 27, providing that maize (corn) flakes or cerealin (maize, malted, steamed and crushed or pared) shall on importation into the Netherlands be classified for duty under the head of potato-meal products at the rate of 2 florins per 100 kilos ($0.804 per 220 pounds).

PERU.

ADDITIONAL DUTY ON IMPORTS AT CALLAO.

According to information received by the British Foreign Office, the Peruvian Government has imposed an additional duty of 2 per cent on imports through the Callao customs house. The collection of the additional taxes on imports, which, until January 10 last, was in the hands of the National Company of Taxation, has since that date been taken over by the Callao customs service.

MOROCCO.

A GENERAL INCREASE OF DUTIES.

Minister S. R. Gummere informed the Department of State under date of February 6, 1908, that the additional duty of 2½ per cent ad valorem on imports into Morocco, authorized by article 66 of the general act of Algeciras, was to go into effect February 19, 1908. The former duty on most imports into Morocco was 10 per cent ad valorem.

BOOKS AND MAGAZINES.

GERMANY.

EXTENSIVE EXPORTATION OF PUBLICATIONS TO MANY LANDS LAST YEAR.

Consul Robert J. Thompson, writing from Hanover, says that one of the highest evidences of a nation's ethical standing among the people of the world is the foreign demand for its literature, its technical studies, and its scientific investigations. In connection with this fact he adduces the following figures on the foreign book trade of Germany:

While the German trade statistics in this particular respect are incomplete, nevertheless the estimate of 42,012,520 books sent by German publishers to foreign countries in 1907 is fairly figured out.

The statistics show that 12,731,100 kilos (kilo=2.2 pounds) were exported from the German market, 5,946,300 of which went to Austria-Hungary, 1,755,200 to Switzerland, 1,055,700 to European Russia, 1,007,900 to the United States, 639,600 to France, 527,500 to the Netherlands, 384,100 to England, 206,200 to Belgium, 204,400 to Sweden, 171,400 to Denmark, and 1,713 to Italy. To these figures 50 per cent more is added as having gone through the mails and included in the trade statistics mentioned. There was thus in all 19,096,650 kilos, or 42,100,475 pounds, of books sent abroad. The valuation of this branch of German export is placed at 75,000,000 marks ($17,850,000), and the number of separate volumes figured at an average of 1 pound each at 42,100,475.

SPAIN.

AMERICAN DIME NOVELS HAVE A PERIOD OF POPULARITY.

Consul-General Benjamin H. Ridgely reports substantially as follows, from Barcelona, concerning the temporary popularity in Spain of a certain class of American publications:

Another strictly American industry has been successfully introduced into Spain, namely, the old-fashioned dime-novel industry. At all the newspaper kiosks French translations of the most popular of these novels have been selling rapidly for a year or more. The books retail at from 4.1 cents to about 6 American cents a copy. American publishers have recently asked this consulate to report as to whether or not this unexpected demand for dime-novel literature is sufficiently stable to warrant the invasion of the field on a big scale with Spanish editions of everything in the dime-novel series. The consul-general says that after carefully investigating the matter he is compelled to report that there is not much outlook for this literature in Spain. As a matter of fact, it has already begun to pall upon the juvenile Spanish appreciation and during the past three months sales have steadily diminished. Moreover, with the exception of Barcelona and Madrid, the reading public is not large. In connection with this matter it may be said that the best profits of Spanish publishers of cheap literature are earned in South and Central America, and it is likely that they have already supplied those markets with the class of literature above named.

MEXICO.

GROWING TRADE POSSIBILITIES IN STATE OF COAHUILA.

Consul Thomas W. Voetter, writing from Saltillo, points out the following opening for the sale in Mexico of American publications:

The authorities of the State of Coahuila are devoting much attention at present to education, and later in this year the normal school will be transferred to a large and well-equipped modern building now under construction. With the increase in general education it is certain that there will be a greater demand for books and magazines, and the attention being given to teaching English can not help but create a market for books in that language.

It can be said that if American publications translated into Spanish (fiction especially) were brought on the market here, there would be some business done, and the same may be said of books printed in English, but the demand would be small, and it would not pay for dealers here to carry any large stock. In view of the future increase in the number of educated persons it would be wise not to neglect any opening, however small it might seem now. [Names of dealers in such goods at Saltillo may be secured from the Bureau of Manufactures.]

PARAGUAY.

SALES OPPORTUNITIES IN THE CAPITAL CITY.

Consul Edward J. Norton, of Asuncion, reports as follows on the field for American publications in Paraguay:

American school books, especially those designed for kindergarten and primary classes, are highly esteemed in Paraguay. This is an opening which publishers of school books would do well to follow up, as it might result in developing the sale of this class of books in this country, as English is taught in many schools; or these works might be translated and adapted for elementary instruction in the Paraguayan primary schools. However, there is no reason why efforts should be confined to the introduction of books of primary instruction only.

There is a decided lack of American publications in English in Asuncion. When English books or periodicals are wanted they are usually ordered from Buenos Aires, where fairly large assortments are kept. American periodicals and a limited selection of fiction in English would find ready sale here. [Names of persons at Asuncion interested in school books, as well as the principal booksellers, may be obtained from the Bureau of Manufactures.]

PERU.

LITERATURE GROWING IN DEMAND IN THE RUBBER REGION.

Consul Charles C. Eberhardt, writing from Iquitos, states that rubber gathering, the chief industry of Amazonian Peru, is coming more and more into the hands of men of some education, who, shut away for months at a time in the deep forests, eagerly read anything that can be obtained, and there would therefore seem to be a fair field there for American publications. [Iquitos booksellers and general importers are listed at the Bureau of Manufactures.]

CREMATION IN SWITZERLAND.

PUBLIC SENTIMENT IN ITS FAVOR GROWING RAPIDLY.

In transmitting the following information, Consul R. E. Mansfield, of Lucerne, reports that the sentiment in favor of cremation is extending, as evidenced by the number of new societies being organized in its favor and the increase in the number of bodies cremated each year:

Cremation is sanctioned by law in Switzerland, and there are four crematories in the Confederation, all of which are provided with modern facilities for this method of disposing of the bodies of the dead. They are located at Basle, Geneva, St. Gall, and Zurich, and the service of each of the institutions is available to anyone upon formal application. In addition to these, new ones are to be built at Berne, Neuchatel, Chaux de Fonds, Aarau, and Lucerne. The one at Berne will be completed in 1909. Of the four crematories already in existence those at Basle, Geneva, and Zurich, are owned by the municipalities where located; that at St. Gall is a private institution, but under police regulation.

The cost of cremation is small at all of the Swiss institutions, and in all of them the schedule shows a lower price for a citizen of Switzerland than for foreigners. The following statement shows the cost of cremation at the four crematories:

Bodies of—	Basle.	Zurich.	St. Gall.	Geneva.
Citizens of municipality	No charge.	No charge.	$6	[a] $10
Citizens of Canton outside the municipality	do	$17	6	16
Citizens of other Cantons	$20	20	12	20
Foreigners	28	24	20	30

[a] Bodies of members of the Geneva Society for Cremation.

At Basle there is an additional charge for hearse from the stations to the crematory, for the urn, etc. This institution also requires that a post-mortem be held on all bodies presented for cremation, and a doctor's certificate stating the character of the disease from which the patient died.

Each of the Swiss crematories has a place for storing urns containing the ashes of incinerated bodies, where for a nominal sum they may be left for an indefinite time.

There are in Switzerland a number of societies which have for their object the propagation of the theory of cremation of the bodies of the dead. The propaganda is based upon various theories, chief among which is that of sanitation, the claim being made that the decomposition of bodies buried in the ground is a danger to public health.

An application to any of the Swiss crematories for the cremation of the body of a foreigner must be accompanied by documentary evidences of nationality, age, place of residence, etc., of the deceased. The ashes of a cremated body may be removed from the country at the will of the family or relations, whereas in the case of burial it is difficult to secure the removal of the body.

ARTIFICIAL PRECIOUS STONES.

GERMAN INVESTIGATORS REPORT BUT LITTLE PRACTICAL SUCCESS.

Consul William Bardel, of Bamberg, advises that about forty artificial precious stones were recently submitted to the Museum of Natural History at Berlin by an association which claimed to have made these stones, based on the process which recently created so much attention.

Several official experts, among whom was the professor having knowledge of gems in the Museum of Natural History, two practical experts, and the chief master of the gold and silver smiths' guild of Germany, were requested to make a careful examination of the merits of the "so-called" new discoveries. The report submitted by this committee of experts reads as follows:

Of the variety of stones we examined we were favorably impressed only by the artificial rubies. Among these were some of great beauty and worthy of consideration. The white sapphires were of no account at all; they appeared dull and washed out. Well imitated were the yellow precious stones; they really resembled the topaz very closely; but this invention carries with it only very little value, since the real topaz is found in such large quantities that they sell at from 2 to 3 marks (47.6 to 71.4 cents) a gramme. Therefore it would seem of little importance to imitate such common stones. Of all the stones we examined, we can only call the artificial rubies a direct success; but the imitation of this latter species of precious stones is no new invention. We therefore declare that there is nothing new or sensational in the claimed invention.

BLACK FOX BREEDING.

THE ANIMALS RAISED FOR THEIR SKINS IN PRINCE EDWARD ISLAND.

Consul John H. Shirley, of Charlottetown, in forwarding the following report, says that as strangers are not allowed on or about the fox farms it is impossible to secure any very definite information concerning the industry.

There are three black fox farms near Atherton where these animals are raised for their skins. These farms contain 20, 25, and 30 foxes, respectively. The skins are sold in London at prices ranging from $500 to $1,800 each, according to quality. I am informed that the fur is used for ornamenting the cloaks of royalty, as it is the only fur to which gold will cling.

The farm containing 30 foxes is on Cherry's Island. The farm containing 20 foxes is in a rough, broken woods country, where the animals are confined by heavy woven-wire netting. The wire is set in the ground two and three feet, in order to keep the foxes from burrowing under, and is about eight feet high above ground, with a curve inwardly at the top of each post of another three or four feet of wire, in order to keep them from climbing over the fence. They sleep in the open the year round, in hollow trees and in hollow logs. These animals are not crossbred, but are confined to their own kind, to keep the fur of the best quality possible. They are fed principally on oats and milk and bread and milk, with a small quantity of cooked

meat once a day, at noon, the amount of meat being lessened during the summer, as it has been shown that too much meat creates mange, diseased scalps, etc. These animals are very wild, and no one can get near them except the keeper, and he only when he brings them food.

PARCELS POST IN ARGENTINA.

STEADY GROWTH OF THE FOREIGN SERVICE SHOWN AT BUENOS AIRES.

The Statistical Annuary of the city of Buenos Aires furnishes the following facts in regard to the growth of the foreign parcels-post service in the Argentine capital:

Packages received via foreign parcels post in 1906 amounted to 138,818, against 113,849 in 1905, 87,878 in 1904, 55,200 in 1903, and 42,892 in 1902. In 1906 France sent 48,063 packages, Germany 30,734, Italy 25,524, Switzerland 13,927, and Great Britain 11,858, while none were received from the United States. The outgoing parcels-post trade has also grown, the number of packages increasing from 8,688 in 1902 to 21,714 in 1906. The United States received 217 of these in the year last named.

The Buenos Aires post-office in 1906 handled 114,721,527 letters, 86,042,134 printings, 2,822,997 post cards, 265,290 samples, and 1,145,508 packets.

TOURISTS IN SWITZERLAND.

LARGE DECREASE LAST YEAR IN FOREIGN VISITORS TO GENEVA.

Consul Francis B. Keene transmits the following report on tourists in Geneva during the year 1907:

The statistics of tourists who stopped in the hotels of Geneva during the year 1907 show a decrease of more than 32,000, the number having been 265,500, against 297,786 in 1906. Of American citizens the number was 16,602, against 18,001 in 1906, and all nations show a decrease except Balkan, Scandinavian, African, Asiatic, and Australian States, though visitors from those countries are not numerous.

The decrease has not been general in the whole of Switzerland, Zurich and Lucerne returns, for instance, showing a larger number of visitors in 1907 than in 1906; it is therefore difficult to state the reasons for the decrease in Geneva.

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CREMATION IN SWITZERLAND.

PUBLIC SENTIMENT IN ITS FAVOR GROWING RAPIDLY.

In transmitting the following information, Consul R. E. Mansfield, of Lucerne, reports that the sentiment in favor of cremation is extending, as evidenced by the number of new societies being organized in its favor and the increase in the number of bodies cremated each year:

Cremation is sanctioned by law in Switzerland, and there are four crematories in the Confederation, all of which are provided with modern facilities for this method of disposing of the bodies of the dead. They are located at Basle, Geneva, St. Gall, and Zurich, and the service of each of the institutions is available to anyone upon formal application. In addition to these, new ones are to be built at Berne, Neuchatel, Chaux de Fonds, Aarau, and Lucerne. The one at Berne will be completed in 1909. Of the four crematories already in existence those at Basle, Geneva, and Zurich, are owned by the municipalities where located; that at St. Gall is a private institution, but under police regulation.

The cost of cremation is small at all of the Swiss institutions, and in all of them the schedule shows a lower price for a citizen of Switzerland than for foreigners. The following statement shows the cost of cremation at the four crematories:

Bodies of—	Basle.	Zurich.	St. Gall.	Geneva.
Citizens of municipality	No charge.	No charge.	$6	[a] $10
Citizens of Canton outside the municipality	do	$17	6	16
Citizens of other Cantons	$20	20	12	20
Foreigners	28	24	20	30

[a] Bodies of members of the Geneva Society for Cremation.

At Basle there is an additional charge for hearse from the stations to the crematory, for the urn, etc. This institution also requires that a post-mortem be held on all bodies presented for cremation, and a doctor's certificate stating the character of the disease from which the patient died.

Each of the Swiss crematories has a place for storing urns containing the ashes of incinerated bodies, where for a nominal sum they may be left for an indefinite time.

There are in Switzerland a number of societies which have for their object the propagation of the theory of cremation of the bodies of the dead. The propaganda is based upon various theories, chief among which is that of sanitation, the claim being made that the decomposition of bodies buried in the ground is a danger to public health.

An application to any of the Swiss crematories for the cremation of the body of a foreigner must be accompanied by documentary evidences of nationality, age, place of residence, etc., of the deceased. The ashes of a cremated body may be removed from the country at the will of the family or relations, whereas in the case of burial it is difficult to secure the removal of the body.

ARTIFICIAL PRECIOUS STONES.

GERMAN INVESTIGATORS REPORT BUT LITTLE PRACTICAL SUCCESS.

Consul William Bardel, of Bamberg, advises that about forty artificial precious stones were recently submitted to the Museum of Natural History at Berlin by an association which claimed to have made these stones, based on the process which recently created so much attention.

Several official experts, among whom was the professor having knowledge of gems in the Museum of Natural History, two practical experts, and the chief master of the gold and silver smiths' guild of Germany, were requested to make a careful examination of the merits of the "so-called" new discoveries. The report submitted by this committee of experts reads as follows:

Of the variety of stones we examined we were favorably impressed only by the artificial rubies. Among these were some of great beauty and worthy of consideration. The white sapphires were of no account at all; they appeared dull and washed out. Well imitated were the yellow precious stones; they really resembled the topaz very closely; but this invention carries with it only very little value, since the real topaz is found in such large quantities that they sell at from 2 to 3 marks (47.6 to 71.4 cents) a gramme. Therefore it would seem of little importance to imitate such common stones. Of all the stones we examined, we can only call the artificial rubies a direct success; but the imitation of this latter species of precious stones is no new invention. We therefore declare that there is nothing new or sensational in the claimed invention.

BLACK FOX BREEDING.

THE ANIMALS RAISED FOR THEIR SKINS IN PRINCE EDWARD ISLAND.

Consul John H. Shirley, of Charlottetown, in forwarding the following report, says that as strangers are not allowed on or about the fox farms it is impossible to secure any very definite information concerning the industry.

There are three black fox farms near Atherton where these animals are raised for their skins. These farms contain 20, 25, and 30 foxes, respectively. The skins are sold in London at prices ranging from $500 to $1,800 each, according to quality. I am informed that the fur is used for ornamenting the cloaks of royalty, as it is the only fur to which gold will cling.

The farm containing 30 foxes is on Cherry's Island. The farm containing 20 foxes is in a rough, broken woods country, where the animals are confined by heavy woven-wire netting. The wire is set in the ground two and three feet, in order to keep the foxes from burrowing under, and is about eight feet high above ground, with a curve inwardly at the top of each post of another three or four feet of wire, in order to keep them from climbing over the fence. They sleep in the open the year round, in hollow trees and in hollow logs. These animals are not crossbred, but are confined to their own kind, to keep the fur of the best quality possible. They are fed principally on oats and milk and bread and milk, with a small quantity of cooked

FOREIGN WEIGHTS AND MEASURES, WITH AMERICAN EQUIVALENTS—Continued.

Denominations.	Where used.	American equivalent.
Quintal	Greece	123.2 pounds.
Do	Mexico	101.46 pounds.
Do	Newfoundland (fish)	112 pounds.
Do	Paraguay	100 pounds.
Do	Syria	125 pounds.
Rottle	Palestine	6 pounds.
Do	Syria	5¼ pounds.
Sagene	Russia	7 feet.
Salm	Malta	490 pounds.
Se	Japan	0.02451 acre.
Seer	India	1 pound 13 ounces.
Shaku	Japan	11.9303 inches.
Sho	do	1.6 dry quarts.
Standard	St. Petersburg (lumber measure)	165 cubic feet.
Stone	Great Britain	14 pounds.
Suerte	Uruguay	2,700 cuadras (see cuadra).
Sun	Japan	1.193 inches.
Tael	Cochin China	590.75 grains (troy).
Tan	Japan	0.245 acre.
Tierce	Newfoundland	300 pounds.
To	Japan	2 pecks.
Tola	do	180 grains.
Tonde	Denmark (cereals)	3.94783 bushels.
Tondeland	Denmark	1.36 acres.
Tsubo	Japan	35.581 square feet.
Tsun	China	1.41 inches.
Tun	Newfoundland (cod oil)	306 gallons.
Tunna	Sweden	4.5 bushels.
Tunnland	do	1.22 acres.
Vara	Argentina	84.1208 inches.
Do	Central America	32.87 inches.
Do	Chile and Peru	33.367 inches.
Do	Cuba	33.384 inches.
Do	Curaçao	33.375 inches.
Do	Mexico	32.992 inches.
Do	Paraguay	34 inches.
Do	Spain	0.99081 yard.
Do	Venezuela	33.384 inches.
Vedro	Russia	2.707 gallons.
Venetian pound	Greece and Mediterranean countries	1.05 pounds.
Vergees	Isle of Jersey	71.1 square rods.
Verst	Russia	0.663 mile.
Vlocka	Russian Poland	41.98 acres.

METRIC WEIGHTS AND MEASURES, WITH EQUIVALENTS.

Units.	Equivalents.	Units.	Equivalents.
WEIGHTS.		LIQUID MEASURE.	
Milligram ($\frac{1}{1000}$ gram)	0.0154 grain.	Milliliter ($\frac{1}{1000}$ liter)	0.0338 fluid ounce.
Centigram ($\frac{1}{100}$ gram)	0.1543 grain.	Centiliter ($\frac{1}{100}$ liter)	0.338 fluid ounce.
Decigram ($\frac{1}{10}$ gram)	1.5432 grains.	Deciliter ($\frac{1}{10}$ liter)	0.845 gill.
Gram	15.432 grains.	Liter	1.0567 quarts.
Decagram (10 grams)	0.3527 ounce avoirdupois.	Deculiter (10 liters)	2.6417 gallons.
Hectogram (100 grams)	3.5274 ounces avoirdupois.	Hectoliter (100 liters)	26.418 gallons.
Kilogram (1,000 grams)	2.2046 pounds avoirdupois.	Kiloliter (100 liters)	264.17 gallons.
Myriagram (10,000 grams)	22.046 pounds avoirdupois.	MEASURES OF LENGTH.	
Quintal (100,000 grams)	220.46 pounds avoirdupois.	Millimeter ($\frac{1}{1000}$ meter)	0.0394 inch.
Millier or tonneau—ton (1,000,000 grams).	2,204.6 pounds avoirdupois.	Centimeter ($\frac{1}{100}$ meter)	0.3937 inch.
DRY MEASURE.		Decimeter ($\frac{1}{10}$ meter)	3.937 inches.
Milliliter ($\frac{1}{1000}$ liter)	0.061 cubic inch.	Meter	39.37 inches.
Centiliter ($\frac{1}{100}$ liter)	0.6102 cubic inch.	Decameter (10 meters)	393.7 inches.
Deciliter ($\frac{1}{10}$ liter)	6.1023 cubic inches.	Hectometer (100 meters)	328 feet 1 inch.
Liter	0.908 quart.	Kilometer (1,000 meters)	0.62137 mile (3,280 feet 10 inches).
Decaliter (10 liters)	9.08 quarts.	Myriameter (10,000 meters)	6.2137 miles.
Hectoliter (100 liters)	2.838 bushels.	SURFACE MEASURE.	
Kiloliter (1,000 liters)	1.308 cubic yards.	Centare (1 square meter)	1,550 square inches.
		Are (100 square meters)	119.6 square yards.
		Hectare (10,000 square meters)	2.471 acres.

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DEPARTMENT OF COMMERCE AND LABOR
BUREAU OF MANUFACTURES

MONTHLY CONSULAR AND TRADE REPORTS

JUNE, 1908

No. 333

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FOREIGN COMMERCE.

BRAZIL.

EXPANSION IN TRADE INTERCHANGE.

LARGE GAINS IN IMPORTS AND EXPORTS—SHARE OF THE UNITED STATES.

The following statistics covering the imports and exports of Brazil for the past three years are transmitted by Deputy Consul-General Joseph J. Slechta, of Rio de Janeiro:

Imports and exports.	1905.	1906.	1907.
Imports	$138,545,670	$152,022,580	$196,383,316
Exports	208,721,350	243,499,615	262,141,005
Excess of exports	70,175,680	91,477,035	65,757,689

While the exports of Brazil increased in 1907 as compared with 1905 about 25 per cent, the balance in its favor has materially decreased, the increase in the imports during the same years being nearly 42 per cent.

TRADE WITH FOREIGN COUNTRIES.

Detailed figures for the first nine months of 1907 show that Brazil's imports from the United States during that period increased over the same period in the previous year at a greater percentage than the imports from any other country. The total figures for imports and exports of the four leading countries doing business with Brazil are as follows, for the nine months ended September 30, 1906 and 1907:

Countries.	Imports into Brazil.		Exports from Brazil.	
	1906.	1907.	1906.	1907.
United States	$13,337,000	$18,810,000	$56,280,000	$66,159,000
United Kingdom	80,560,000	42,613,000	32,198,000	34,317,000
Germany	15,660,000	21,384,000	26,774,000	34,054,000
France	10,066,000	12,228,000	16,014,000	27,834,000

The increase in imports from the United States amount to 41 per cent, as compared with the first nine months of 1906. The United Kingdom follows with an increase of 39.2 per cent, Germany with an increase of about 37 per cent, and France with an increase of 21.5 per cent. The first three quarters of the year 1907, therefore, marks a new era in the trade relations existing between the United States

and Brazil. Not once in the preceding decade has the United States given so decided an indication of progress in her export trade to Brazil.

[The United States Bureau of Statistics gives the value of exports to Brazil for the nine months ended with September as $15,529,562 and for the corresponding period in 1906 as $11,830,971. The imports from Brazil were $65,375,746 and $52,226,015 in the respective periods.—B. of M.]

MARKETING AMERICAN PRODUCTS.

SUGGESTIONS TO MANUFACTURERS REGARDING METHODS TO PURSUE.

Vice-Consul-General Slechta, impressed with the fact that plans are needed for securing to American manufacturers more effective trade representation in Brazil than has thus far been secured, submits the following suggestions:

Special representatives sent here by the more progressive and aggressive manufacturers to study the field find that there is nowhere in Brazil a distinctively American house handling American manufactured products. There are two or three dealers in agricultural machinery in Rio de Janeiro who give preference to certain lines of American goods. Almost all others are concerns with German, British, or French connections, which give decided preference to goods originating in their respective countries. It is easy to see just what this means. In the matter of automobiles, for example, there are in Rio de Janeiro four well-equipped garages with repair facilities, but in not one of them can an American machine receive the same attention as a French, German, or English car. This is due, in a great measure, to their unfamiliarity with American-made automobiles.

During the past year not less than eight large motor-car manufacturers in the United States have had special agents in Brazil, but as yet not one of them has been successful in establishing an agency that does any business for the manufacturer. None of the concerns which have taken agencies of American automobiles are in a position to establish a repair shop and garage facilities, because such a course involves an outlay that the present demand for any particular make of American car does not warrant. As long as these conditions continue Brazilians will buy other than American machines. It is not reasonable to expect individual manufacturers to establish branch houses in Rio de Janeiro, but certainly there are enough American cars of various makes to warrant the establishment of a repair shop and garage especially for American cars.

HOW TO SELL MOTOR CARS AND MACHINERY.

This, it would seem, might be made a legitimate function of the Association of Licensed Automobile Manufacturers. Perhaps for the first six months such an establishment would not pay expenses, but it ought to be the means of securing a foothold for American-built motor cars in a market which is certain to demand an increasing share of attention on the part of the foreign departments of American automobile factories. The association could establish a permanent exposition of American cars and, in connection therewith,

make it their object to work with each member of the organization to the end of securing proper local agents in other Brazilian cities.

A similar exposition established in Rio de Janeiro would do more to stimulate the trade in American agricultural and industrial machinery than any other method expedient at this time. There are many local concerns having agencies of American machinery manufacturers who have no suitable display rooms and who can make no serious efforts to introduce the manufacturers' products. This can scarcely be otherwise, since most of these concerns either have more important European interests, or they carry so diverse a line and have such diverse interests generally as conflict with an agency of this character.

A LARGE FIELD AWAITING DEVELOPMENT.

In many lines of agricultural and industrial machinery the circumstances require that considerable effort be made to create a demand which is as yet only a latent one, but which has tremendous possibilities. This will never be done by indifferent local agents not in the least inclined to spend money in an advertising or educational campaign. An organization like the National Association of Manufacturers ought to be a very efficient medium to undertake the maintenance of a permanent exposition of agricultural, industrial, and other machinery. Their representatives here could become experts in matters of credit and customs regulations, the two most delicate features of Brazilian business operations. They could learn to place agencies advantageously, and when that did not seem advisable, to make suggestions for the establishment of branch houses operated by the manufacturers.

With this city as a basis of operations, a population of close to 8,000,000 can be readily reached by rail. The greater share of this population is devoted to agricultural pursuits. It certainly is not reasonable to suppose that American manufacturers are justified in assuming that there is no greater market for agricultural and industrial machinery in this country than is indicated by the paltry sales of a few hundred thousand dollars worth of such manufactures, so those who have a real interest in getting business here can not do better than take up the matter of establishing in Rio de Janeiro a joint exhibit and in connection therewith an efficient personnel of special representatives who will devote themselves to a study of the markets and methods of developing trade throughout the interior of Brazil.

REPRESENTATIVES OF SPECIALTIES THE MOST SUCCESSFUL.

An agent representing a manufacturer of mining and milling screens, after having visited mines in nearly all other parts of South America, came to Brazil. He visited the only two large gold mines in this country, which are reached by an eighteen-hour journey by rail and several hours by mule back. The largest of these mines has been in the hands of a European syndicate for thirty years and in that time has mined gold to the value of $145,995,000. This mine has never used anything but European screens. The manufacturer who sent out the agent in question had corresponded with this company for some five years without getting an order, but after an afternoon's visit at the mine their representative sold a trial order amounting to

several thousand dollars. At the other large mine these same screens had been in use for a few months and the superintendent informed the American agent that his manufacturer's screens outlasted any others he had ever tried at a ratio of one to seven. The agent secured another large order here.

A commercial traveler for an American house dealing exclusively in sponges has been in this city for a few days. Practically all sponges on the market here have been bought in Europe, and dealers were surprised upon learning that an American house could import the finest sponges from Mediterranean sources and sell them here in the prepared state at prices much below European rates. This commercial traveler, probably the first one selling sponges exclusively to visit Rio de Janeiro, in three days took orders amounting to $3,000, and is apparently just started. With some of his customers he has arranged cable codes for ordering direct. His customers will doubtless be permanent ones.

American phonograph companies have apparently waked up to a realization that they were losing much good business in Brazil. For three years European manufacturers of phonographs have had Brazilian records on the market. They sent experts here to take records from Brazilian artists in various musical lines, and the result was that they sold not only most of the records but a majority of the machines.

However, American companies will no doubt regain their prestige now that they have come down here with that intention. One of the largest manufacturers has just completed a preliminary period of work in making Brizilian records, the originals in wax being returned to New York for duplication. Another company has experts at work here now and expects in two or three months to have hundreds of Brazilian records on the market. The latter company has contracted with an American doing business here for the agency in southern Brazil with the expectation of doing $60,000 worth of business the first year, and there is no reason why they should not realize their expectations.

JEWELRY TRADE.

AMERICAN HOUSES SECURING AN ENTERING WEDGE IN THE BUSINESS.

Consul-General George E. Anderson, of Rio de Janeiro, says that manufacturing jewelers of the United States seem to have an opportunity to develop considerable trade in Brazil, a field which he states is at present served all but exclusively by German and French houses. Mr. Anderson gives the following trade particulars:

One or two American houses have made an effort to get into the trade here, and seem to have had very fair success. In 1906, the last year for which figures are available, Brazil imported about $250,000 worth of gold jewelry and $193,000 of silver jewelry, these amounts being in addition to items in which copper was the chief constituent part, christofle, and plated ware of different sorts other than jewelry. Of the imports of gold jewelry and jewelry classed as such, Germany sent about 58 per cent, France about 35 per cent. In silver jewelry Germany had about two-thirds of the trade, France about one-fourth, with the small balance scattered. During 1907 several representatives of American houses came into the trade and reported that they

had considerable success, especially in the line of cheap jewelry. Later figures, therefore, are likely to show considerable returns from the United States, although the bulk of the trade is still where it has been for a good many years, as indicated.

REQUIREMENTS OF THE MARKET.

It is difficult to give a definite idea of the customs and other situation, for the quality of goods varies so much that generalizations are likely to mislead. No particular marks are required of imported goods, and there is no reason why American goods can not be sold as well as any other, if American manufacturers can meet the competition. Styles are in general practically the same as those obtaining in the less expensive goods in the United States. There is a natural leaning in all South America in such matters to French styles and ideas. Whether it can be said that the trade will recognize quality in goods depends altogether upon whether or not the goods are properly presented. There are comparatively few lines of filled goods in vogue here at present, but probably this is a matter of price more than anything else. The goods ought ot be presented in no other way than by a direct representative. A manufacturer's agent may sometimes be in a position to get in touch with the trade; but work through cataloguing or even through export commission houses will likely be thrown away. Credits as a rule are liberal. Terms vary considerably, but six months' time with interest from the date of the invoice is reported as a common provision. It is unsafe to quote prices now prevailing, in view of the wide variation in the quality of goods.

[The consul-general forwards a list of Rio de Janeiro business firms for manufacturers wishing to secure further details of the trade or to attempt to secure agents or business by correspondence. These names may be secured from the Bureau of Manufactures.]

EXPORTS OF COPAL GUM.

HOW IT IS COLLECTED—LARGE SUPPLIES AVAILABLE.

For the benefit of American inquirers who are interested in "jatoba" or "jatahy," commonly known as Brazilian copal gum, Consul-General Anderson says that it seems safe to say that considerable business in this product can be done if there is sufficient demand for it to warrant gathering it on a large scale. He adds:

Last year the exports of the product from Brazil amounted, at a valuation of about 67 cents a pound, to a total of about $9,000. The quality of the gum, as suitable for use in the manufacture of varnish and for some medicinal purposes, is said to be very good. There are large supplies of the product to be had in Minas Geraes in pockets in the ground, being thus collected by the burning of forests containing trees bearing the gum. The gum being thus melted forms pools, which harden and preserve the product. The trade in the gum so far has been so small that there has been no systematic effort to work these sources of supply. American importers desiring to get in touch with possible shippers can best do so by addressing parties whose names are forwarded [filed at Bureau of Manufactures].

BOLIVIA.

AN IMPORTANT COMMERCIAL CITY—GREAT BUILDING ACTIVITY.

Special Agent Charles M. Pepper, in the following report on Oruro, depicts the bright commercial and industrial prospects of that high Andean city, which he says is destined to become the crossroads of Bolivia and where the establishment of an American consulate has been recommended.

Oruro is a city of 20,000 inhabitants with a commercial future which is of interest to everybody who expects to do business in Bolivia either in the way of mining, railroading, or supplying merchandise. For this reason I give some facts in regard to it.

The city is located in the heart of the great central plain at an altitude of 12,000 feet and in the midst of an extensive mining region. It is about 575 miles distant from the Pacific coast ports of Antofagasta and Mollendo, respectively. The railway from Antofagasta has been in operation for several years. The through connection to Mollendo across Lake Titicaca will be made in July when the central section of the railway system which the Speyer-City Bank Syndicate is constructing is completed. Commercial travelers and tourists will then have the opportunity of reaching Bolivia from one port and leaving by the other port. This through trip will be advantageous in the chance it affords to note the resources and the commercial possibilities of the country.

The population of Oruro is cosmopolitan, including English, Germans, French, Italians, Americans, Chileans, and Peruvians. This is due to its position as a mining center. One of the greatest of the tin mines is in the heart of the city itself. Other tin and silver mines surround it. Among the best known mines are the Socavon, the San Jose, the Itos, and the Mercedes. There are also many smaller mines. The ore or concentrates from points distant 150 miles and more are brought into Oruro by pack trains of llamas and burros and then shipped out over the railways. Small smelters are 12 to 15 miles distant at Machamarca.

The political administration of the Department is centered at Oruro, which is the headquarters of the prefect and the subordinate officials. An important branch of the political administration is the custom-house. Since an export tax is levied on all the mineral products, the importance of an interior custom-house at a common shipping center will be understood. The bulk of the minerals from the Department of Potosi also comes to Oruro for shipment. The customs officials are required to give a certificate for every ton of ore shipped, otherwise the railroad company can not accept the cargo.

DISTRIBUTING POINT—NEW RAILROAD LINES.

From its situation as a distribution point for the minerals it naturally follows that Oruro is a distributing center for imported merchandise. Machinery and mining supplies are handled for a district hundreds of miles in extent. There are some large warehouses and quite extensive stores for retail trade. In addition to machinery about every class of goods that is required in a comparatively cold climate is kept in stock. This covers textiles, boots and shoes, canned goods, flour, and packing-house products. All of these articles *are usually* handled by a single firm.

Hitherto the limitation on the growth of Oruro has been the lack of railway facilities for the interior points. This condition is changing and within a few years the city will become the railway crossroads of Bolivia. After the connection with Lake Titicaca is completed the building of the branch lines will begin. One of these starting from some point on the existing railway between Oruro and Uyuni will reach Potosi. Another line will run to the city of Cochabamba, which is itself an important commercial point and is in the center of a rich agricultural valley. The Cochabamba line ultimately will be prolonged to the Chimore River and will thus give a railway outlet from the tropical regions to Oruro.

The commercial future of the city has not yet been discounted. When tin was at the top-notch figures there was unusual activity and some increase in population, but hardly what would be called a boom. The depression in the mining industry, which caused some of the smaller mines to shut down and others to restrict their operations, resulted in a temporary decrease in the number of inhabitants, but the recovery from this is already felt. Though the commercial and mining situation is quiet, Oruro has lost none of its prestige. The prospect is that it will continue to grow steadily. In addition to its advantages as a mining center it will be the headquarters of the railway companies, which will have their shops and roundhouses established here and will provide means for a considerable population of artisans and mechanics.

BUILDING ACTIVITY—AMERICAN FIRMS AND CONSULATE.

There is at present more building activity in Oruro than in any other city of Bolivia. Nearly all the houses, whether dwellings or stores and warehouses, are of a single story, but the new buildings are of two and, in a few instances, three stories. They are mostly of brick and mortar or adobe and wood, structural steel not having been employed in perceptible quantities. There has been, however, a market developed for builders' hardware, some of which has come from the United States. Yet there has been less use of sheet-iron roofing than was to be expected, recourse having been had to tiles.

The business of Oruro as a distributing center heretofore has been largely in the control of European houses. Not only the Germans and the English, but also Austrians have had a share in it. Some of these get goods from the United States, though not in large quantities. There are two American firms, one of the leading American houses on the West Coast having established a branch two years ago. The other firm has been established longer and conducts a retail as well as a wholesale business. [The names of both houses are filed with the Bureau of Manufactures.] It should be added that Oruro has nine banking institutions, the leading banks on the West Coast being represented either by branches or by agencies, while all the principal Bolivian banks have branches.

The commercial importance of Oruro is so well assured that the recommendation of Minister Sorsby for the establishment of an American consulate is fully justified. The railway interests which in the future will predominate will be American. Some of the mines also will undoubtedly be developed by American capital, and a trade grow up with the United States which should receive encouragement by providing an American consul.

CHILE.

PHARMACEUTICAL SUPPLIES.

UNITED STATES SHOULD HAVE MORE TRADE IN DRUGS, PERFUMERY, ETC.

Consul Alfred A. Winslow makes the report from Valparaiso that there is a large demand for foreign perfumery, drugs, medicines, and chemical products in Chile, amounting in 1906 to $1,434,024 United States currency, the details following:

The sum of $183,636 was spent for perfumery; $708,219 for drugs and medicines, and $542,169 for chemical products. The imports for 1907 will show a good increase over these figures in these lines. Of the perfumery the United States supplied less than 10 per cent, while France supplied more than 50 per cent, with England next and Germany third; of the drugs and medicines the United States supplied 26 per cent, and France a like amount, with Germany and England in the order named; of the chemical products the United States supplied less than 4 per cent, while Germany furnished more than 50 per cent, England coming next with about 20 per cent.

There does not seem to be any reason why the United States should not have a large portion of this trade if the markets are studied and an effort is made to get it. American products stand well and will replace other goods if the trade is supplied on equally as good terms. From what this consulate can learn there has practically been no effort made until lately to secure this profitable business. The most effective way to get it is to send a good salesman into the field. This will bring quicker results and be cheaper in the end than trying to get it by correspondence.

The duty on perfumery ranges from 33 to 88 cents per kilo (2.2 pounds); on drugs, medicines, and chemical products it is 25 per cent on a fixed valuation per kilo, which, in many instances, is below the market value.

Great care should be taken to pack this class of goods very carefully. This is an important matter with all lines for this market, but it is especially true of drugs and medicines.

PUNTA ARENAS TRADE OUTLOOK.

INDUSTRIAL ACTIVITY AT THE WORLD'S MOST SOUTHERN CITY.

In reporting that Punta Arenas is the only free port in Chile, Consul Winslow gives the following commercial information concerning this far southern port:

It has a population of about 12,000, with a rapidly developing country depending upon it as the base of supplies. The business of the place has more than doubled within the last four years, and the future promises well. The outlook for business is good, and here is a place where American goods should sell well. At present nearly everything comes from Europe. But few American goods are seen in the shop windows. It will pay to work this field thoroughly. There are two freight steamer lines reaching this port direct from New York, so shipping facilities are good.

Sheep farming and mining are the principal industries of the country around Punta Arenas. There are upward of 3,000,000 *sheep now in the* country tributary to Punta Arenas, and they are

rapidly increasing. The climate seems to be especially adapted to the growing of heavy and fine fleeces of wool. During the past year three extensive sheep-slaughtering and cold-storage plants have been erected near that place, with a present capacity of handling 300,000 sheep per year. A line of steamers has been arranged to take the dressed sheep to the London market, where good prices are paid for the mutton.

Many of the sheep ranches are situated 50 to 100 miles from the base of supply, and it is proposed to use traction engines and automobiles as the means of communication over the level prairies, many of which are barren wastes, the grazing portions often being located many miles apart. Four 40-horsepower German traction engines have just been put in service from that port. One of these engines will pull a train of three or four wagons loaded with freight across these plains at the rate of from 4 to 6 miles per hour. Here is an opening for some American traction machines.

[A list of the principal business houses at Punta Arenas is forwarded by the consul. Copies of same may be obtained from the Bureau of Manufactures.]

COLOMBIA.

A BRITISH OFFICIAL REPORTS ON TRADE REQUIREMENTS OF BOGOTA.

Writing on the subject of British trade in Colombia, the British minister at Bogota says in part:

There are no British business houses here, and it would be unwise for firms of the United Kingdom to employ foreigners who are or may be agents for competing firms of their own nationality. Very few British travelers now come to Bogota. British trade suffers in competition on this account, for the presence of good travelers is not only necessary in order to inform the houses at home of the changes in the requirements of clients and in the standing of houses here, but it facilitates the sale of goods.

There are comparatively few British firms that export goods to Bogota, and these do so principally from Manchester, Birmingham, Leeds, and Glasgow, shipping mainly cotton goods, hardware, woolen goods, sewing cotton, and machinery. In gray cloth Manchester holds the Bogota market. Gray drills are imported from the United States, in pieces of 40 yards, weighing about 12 pounds. This diagonal drill is one of the principal imports of cotton goods from the United States, and has not been imitated successfully in the United Kingdom or anywhere else; a great quantity of it is consumed here.

Bleached goods are imported almost exclusively from the United Kingdom, as Manchester is able to meet the requirements of the Bogota market. Small quantities do, however, come from the United States. Their makes are of good qualities, 19 by 22 and upward, and are of heavy yarns, but they do not rival the Manchester goods in finish. The favorite finish here is the soft, and the old starchy ones are fast disappearing from the market. There is very little demand for Croydons, but orders for light weight sheetings have increased.

CALICOES AND SUITINGS.

Manchester has to meet a growing competition in printed cotton goods from many parts of the world. German prints have not, it is true, been a success, but United States prints were introduced at a time when, owing to heavy crops of cotton, very large stocks were to be had for export at less than cost price; they held the market for some time, but their competition afterwards slackened and exists chiefly owing to the fact that commission agents in the United States can furnish supplies at short notice and cheap prices from stocks on hand, but greater trouble is taken in the United Kingdom with regard to packing and compliance with the client's wishes, and this is fully taken into account. Nevertheless, the Manchester manufacturers should watch this class of competition, for there have been seasons when the United States absorbed a good share of the orders. From 1904 to the end of 1906 the demand diminished,

but in 1907 orders have largely increased, as the American manufacturers have been printing red and blue patterns very well. The prints of the United States are more or less of one width, viz, 26 inches, and one quality, viz, a light 16 by 18, and the assortment of patterns is very limited.

In cotton suitings Manchester has to compete against Italy and Spain, as these countries are able to export their goods at about the same price as the United Kingdom. The Manta Italiana is a drill which resembles woolen cloth pattern. It has displaced the Manchester printed moleskin and printed drills, which were shipped here in considerable quantities.

MINING MACHINERY AND HARDWARE.

Mining machinery usually comes from the United Kingdom. Pelton wheels, which are much used, come from the United States. Catalogues should state the smallest weights into which the machinery can be divided. Comparatively few places in Colombia can be reached without resort to mule transport, and, where possible, pieces should not exceed 150 pounds in weight. The amount of machinery, especially for mining purposes, which has been brought to the country and abandoned on the road would surprise anyone unacquainted with the mountainous parts of Latin America. British manufacturers are now, however, better informed respecting local conditions than was the case formerly, and it is believed here that, taking machinery as a whole, the greater part now comes from the United Kingdom. As soon as the railways now under construction or in contemplation are completed there will be a greatly increased demand for machinery of various kinds.

Hardware from Birmingham is not as well introduced in this market as it should be. Many orders for cheap goods of inferior quality are still placed in Germany, but the better class of hardware comes mostly from the United States, and has done so for many years. For example, the American machete, an article in almost universal use, holds the market. American tools are lighter in weight than British, which is no small matter for the importer in view of duty being chargeable on weight. Barbed wire for fencing, for which there is a large demand, comes almost entirely from the United States. Enameled hardware comes from Germany, as the quality required is inferior to that made in the United Kingdom.

ARGENTINA.

STATISTICS OF LAST YEAR'S TRADE—INCREASED EXPORTS THIS YEAR.

The statistics of the foreign trade of Argentina for 1907, as made public in Buenos Aires in March, show exports (in gold dollars of the value of 96½ United States cents) aggregating $296,204,369 and imports of $285,860,683. Compared with 1906 there was an increase in imports of $15,890,162 and in exports of $3,950,540. The classification of the exports was:

	Value.	Increase.	Decrease.
Pastoral products	$123,820,205		$816,234
Agricultural products	164,091,621	$6,436,929	
Forestal products	5,342,357		579,502
Mineral products	565,039	291,223	
Products of the chase	829,559		268,941
Various	1,155,588		1,612,935

The small increase in exports was due to the partial failure of the corn crop, the exports of that grain decreasing $23,711,708, and to the lessened exportation of hides and skins. There was an increase of $16,485,000 in the value of exported wheat and flour, of $10,165,365 in linseed, and of $2,476,213 in oats.

THE CAUSE OF THE INCREASED IMPORTS.

As regards imports, the net increase of nearly $16,000,000 gold was *due to the augmented* importation of liquors, paper, furniture, agri-

cultural implements, building materials, railway carriages, wagons, locomotives, steel sleepers, and railway materials in general. The importation of articles of food also augmented considerably, but there was a falling off to the amount of $6,796,848 gold in textile materials and manufactures. This is the consequence of the increasing development of the so-called "national industries" devoted to the making up of silk, woolen, and cotton materials. The importation of sugar increased largely owing to the partial failure of the Tucuman crop of sugar cane.

The imports from the United Kingdom increased by $3,100,000 to $97,900,000 gold, but those from Germany increased by $7,300,000, though the total reached only $45,800,000. The exports to the latter country diminished by nearly $3,000,000, the amount being $36,400,000, while the exports to the United Kingdom increased by $10,500,000 to $53,700,000. This latter amount does not include Great Britain's share of exports for orders, perhaps nearly two-thirds of the total, $93,000,000. The remainder was probably divided between Germany, France, and Belgium. The Argentine statistical department has been unable to classify these exports according to nationalities.

DECLINE IN UNITED STATES TRADE.

The exports to and imports from the United States both diminished. According to the figures of the United States Bureau of Statistics the exports to Argentina in 1907 were of the value of $30,111,672, a decrease from 1906 of $3,159,897. The imports from Argentina were $16,171,129 in value, a decline of $2,120,239.

The exports of grain this year are officially estimated at 4,250,000 tons of wheat; 1,200,000 tons of linseed; 600,000 tons of oats, and 2,000,000 tons of maize. Up to the middle of March the exports of wheat, oats, and linseed were nearly double the quantity exported in the same time last year.

MEXICO.

AMERICAN MUSICAL INSTRUMENTS.

DEMAND FOR PIANOS AND PHONOGRAPHS—EUROPEAN COMPETITION.

Special Agent Arthur B. Butman, writing from Mexico City, tells of the increasing demand in Mexico for American pianos and phonographs, while Germany and France supply most of the brass and string instruments. He says:

The importation of pianos into Mexico is steadily increasing, and the Republic offers at the present time a good field for this and for various other musical instruments. The Mexican people are, as a whole, a music-loving people and possess as well a natural taste for what we know as "good music." I am told that previously to a somewhat recent period, possibly ten or twelve years ago, musical instruments of American manufacture were comparatively unknown in this country. A limited number of American-made pianos of the high-grade class were introduced at the time mentioned and finding favor the trade has constantly grown. French and German pianos were on the market before the advent of the American instrument, and at present we meet strongest competition from the latter makes. Dealers state that American pianos are now considered firmly established on the market, and that they are constantly becoming better known and

more popular with the Mexican buyer. During the fiscal year 1907 the United States exported to Mexico $110,805 worth of pianos and in addition $5,689 in value of pianolas, etc. For the year 1906 the total value of pianos exported from the United States amounted to $638,501, and for the calendar year 1907, $1,050,343, exclusive of $675,105 in value of pianolas and other piano players. Mexico furnished the second largest market during 1906, purchasing pianos to the value of $85,050, Canada taking the lead in purchasing $211,340 worth, and the United Kingdom third with an import valuation of $84,717. The exports of pianofortes from the United States to Mexico in the fiscal years mentioned were as follows: 158 in 1902, valued at $36,197; 192 in 1904, valued at $43,694; 380 in 1906, valued at $85,050, and 443 in 1907, valued at $110,805.

The average pianoforte of American manufacture is considered in Mexico better in construction and of higher class than the average instrument of our competitors, and it is, as a rule, a little higher in price. The high-grade American pianoforte is acknowledged here, as in the musical world generally, a superior product. American instruments of this grade are for sale and find purchasers among the wealthier classes and the professionals. Those pianos, however, which sell most readily in Mexico are priced at from $300 to $400 gold.

STYLE AND FINISH PREFERRED.

For the most successful furtherance of sales it is very desirable, if not absolutely imperative, that piano makers, as well as other manufacturers sending their goods to this country, cater to the tastes and maybe to the whims of the people, whether such requirements be in accord or at variance with their own personal ideas. It may be stated that the Latin-American taste is usually more ornate than that of the American across the border. The Mexican trade demands an elaborate piano case decorated with candelabra, and European pianos are invariably furnished with such. I am informed by a dealer in Mexico City who handles American pianos exclusively that in order to effect sales of our instruments with the Mexican buyer he is obliged to add these ornaments. The cost to the manufacturer is insignificant when compared with the price of the piano, and the German exporter, who seldom neglects a detail which may please a purchaser and in turn be a personal benefit, always furnishes his instrument as above described.

It is essential that the cabinet work be good. Ebonized wood is preferred to all others; probably 95 per cent of the pianos sold here are in the black finish. One feature which has proven of great help in advancing sales of American pianos in Mexico is the guaranty given by the manufacturers covering a period of five, and in some instances, ten years. In styles both grands and uprights are sold; the latter being naturally the popular piano. A matter of vital importance, which should receive the attention and study of piano makers in the United States wishing to introduce makes here, is the Mexican climatic conditions, and their action upon the pianoforte.

I am given to understand that American makers extract every possible atom of moisture from the wood which goes into the construction of a pianoforte for use in the United States. For use in Mexico such preparation is almost suicidal to the instrument, since *pianos destined* for this country must contain a certain percentage *of moisture in* the construction wood in order to possess satisfactory

wearing qualities. It would seem that the possibilities of the Mexican piano market justify a study of its detail requirements by those interested in the piano trade.

The following instructions for shipments of pianos and organs to Mexico should be valuable to those interested:

Mexican custom-house regulations require that net legal and gross weights of each package be given exactly. Net weight is the weight of the instrument without wrapping or packing. Legal weight is the weight of the instrument including wrapping and any other packing excepting the outer shipping case or box. Since in many cases duty charges are based on legal weights, interior wrappings should be as light as is consistent with safety. Invoices should specify the contents of each package, and each package should be plainly numbered in consecutive order to correspond with the invoice. Invoices should be made in duplicate, original being mailed to the buyer direct, and a duplicate mailed to the customs agent at the border. Consular invoices should be made in triplicate, the original mailed to the customs agent, a duplicate accompanying shipment, and a triplicate mailed to the buyer direct.

For shipment of piano scarfs, if any portion be of silk, either scarf or fringe, the same must be specified; if all cotton, this should be stated on the invoice. Traveling cases of portable organs, etc., (of wood), pay a smaller duty if shipped in separate packages; consequently when practicable the instrument should be shipped separately and not in the traveling case. The duty on pianos and organs entering Mexico is 55 centavos per legal kilo (2¼ pounds).

PHONOGRAPHS AND CLASSICAL MUSIC POPULAR.

Phonographs or talking machines are in greater demand in Mexico, at the present time, than any other musical instrument. Phonographs are purchased by all classes in all portions of the Republic—in the large cities and near-by towns, in mountain villages far removed, on haciendas, and in isolated mining camps; and for use in the last-mentioned localities the demand is widespread. The phonograph of American manufacture predominates and in reality holds the market. A French machine, possibly a German, and formerly an Italian were found, but the field is practically held by the Americans—and nearly, if not all makes, are represented—with small competition from the French.

I am informed that the classes of music best suited to the Mexican trade are classical and operatic, marches and two-steps, or other dance music. Ragtime and plantation melodies, so popular with a portion of our masses, do not largely appeal to the people here. In Mexico one hears the bootblack or the newsboy whistling selections from classic and operatic airs, rather than from what we know as the "popular songs." I have many times during my stay in the Republic noted in the various towns gatherings of one, two, or three dozen peons, huddled as closely as may be before the open doorway of a music store, from whence issued the sounds of a phonograph, and playing nearly always a classical selection or one from some famous opera. In style, the disk machine is the most popular.

STRING AND BRASS INSTRUMENTS.

A good proportion of string instruments come from the United States, with German instruments of like character in keen competi-

tion. The cheaper grades of violins and guitars find considerable sale among the lower classes, whose small purchasing power necessitates the requisite of low cost. Italian strings are considered the best and have the largest sale. Rosin is principally secured from Germany owing to price, this being approximately one-third less.

Mexican bands are numerous and there is a fairly large demand for brass instruments throughout the Republic, which is principally supplied by France. French instruments are much better known than the American, having been long in the field, and, perhaps partially for this reason, better liked. The pitch of the French-made brass instrument—one-half tone higher than our own—is preferred, and likewise French instruments of high grade are lower in price than American of the same class.

American sheet music obtains a fair sale at present, and it has been suggested to me that American sheet music publishers might do well to publish vocal selections in the Spanish language, since the sale for such would undoubtedly be sufficiently large to warrant the action. However, this should be a matter for the publishers' own determining, after possessing a good knowledge of the Spanish requirements based upon personal investigation.

Catalogues of musical instruments sent to Mexico should be printed in the language of the country; if printed in English they are comparatively worthless.

TRADE OF CIUDAD PORFIRIO DIAZ.

THE SALE OF AMERICAN FOODS CAN BE INCREASED IN THAT MARKET.

In reply to an inquiry from an American manufacturers' association, Consul Luther T. Ellsworth furnishes the following information in regard to the consumption in Ciudad Porfirio Diaz of products similar to those manufactured by that association:

The trade of this Mexican district is naturally with the United States, because of its proximity and the quality of the goods imported therefrom, but many European countries are receiving a considerable share. Trade can be secured here in almost every article produced by the association, but representatives speaking Spanish and experienced in dealing with merchants of Latin America should be sent.

American products are well known here, and are satisfactory in every respect. Of the class of goods manufactured by the association making the inquiry, the following were imported from the United States in 1907:

Articles.	Value.	Articles.	Value.
Agricultural implements	$56,000	Machinery—Continued.	
Bath tubs	3,500	Stationary engines, boilers, tanks, etc	$88,660
Carriages, cars, etc.:		Woodworking machinery	3,630
Carriages and wagons	184,941	Malleable iron	8,625
Mining and railway cars	137,321	Metal roofing	12,540
Wheelbarrows	2,965	Proprietary medicines	39,594
Furniture	77,963	Stoves	19,515
Hardware, for saddles	1,030		
Hosiery	1,275	Total	685,484
Machinery:			
Locomotives	49,925		

TRINIDAD.

LARGE SALE OF AMERICAN PRODUCTS IN WEST INDIAN ISLANDS.

In answer to a Galveston inquiry, Consul Wm. W. Handley writes as follows in regard to importations into the West India island of Trinidad during the past year:

There were 234,368 barrels of flour imported during the year 1907, 95 per cent of which came from the United States; the balance from Canada. During the same period 44,719 gallons of edible oils were imported, mostly from France, the American share being about 25 per cent, which consisted chiefly of cotton-seed oil.

There is a large consumption of packing-house products in this colony. During 1907 there was imported 6,976,103 pounds of meat, consisting of barreled beef and pork, sausage (smoked), dried and canned meats. Of this amount the American share totaled 6,236,998 pounds, consisting principally of canned beef, barreled beef and pork, smoked ham and bacon, etc. Of the 1,889,000 pounds of lard and lard compound imported 95 per cent came from the United States. The sale of American oleomargarine increased 18 per cent last year, the United States having supplied 200,000 pounds. The outlook for more trade in this line of goods is encouraging.

All the hewn and sawn timber comes from the United States. About 10,000,000 feet was imported last year, which came principally from the Gulf States. [The importing firms of Trinidad are listed at the Bureau of Manufactures.]

CANADA.

PURCHASES OF ONTARIO.

UNITED STATES PRODUCTS LEAD IMPORTS INTO CANADA.

Consul H. D. Van Sant states that the principal lines of goods from the United States for which a steady and generally ready market can be held or obtained in the Kingston district and Ontario, Canada, notwithstanding other keen outside competition, are the following:

Carriages, carts, and wagons, the American makes being highly regarded and generally sold cheaper than English or even Canadian makes. Drugs, chemicals. dentists' supplies, fancy and staple toilet goods are in good demand. The American brands are constantly increasing the already large sales in these lines.

American marine engines are having a ready sale in Kingston this spring. One firm from across the line has just sold a $3,000 engine here, while more than a dozen smaller and less expensive ones have been ordered or delivered. It is safe to say that more than one hundred new American marine or motor engines have been sold here in a little over two years. This consulate has aimed to do its share toward introducing and bringing about some of these results.

Electric apparatus, gas engines, and gas stoves and fixtures, hardware tools and implements find a ready demand and generally profitable market along the border. In the line of machines and machinery the sales of the United States increased from $5,877,942 in

1906 to $7,621,673 in 1907, while the sales of Great Britain, the nearest competitor, amounted in 1906 to $261,989, and in 1907 to $575,436.

MISCELLANEOUS GOODS—EUROPEAN COMPETITION.

In oils and paints, paper and manufactures of paper, wood and manufactures of wood, including furniture, tobacco, fruits, canned goods, electro-plated and silver ware, leather, and boots and shoes, the United States holds the leading market generally, and with diligent and proper effort the results already achieved can be sustained and in growing sections this trade increased.

In some lines, notably guns, cutlery, and toys, the German is underselling both American and English competitors, while the Canadian preferential tariff in favor of Great Britain is probably the most important measure in building up trade between Canada and the mother country, to the loss of the United States. Yet in the long run, notwithstanding the keenest competition and sentiment, the natural advantages in geographical position and common commercial interests and tastes seem to count favorably, and the import of manufactures from the United States continues to lead. To hold this position the American exporter is cautioned to watch the situation and meet every new wave of industrial competition by extending fair trade inducements to Canadian merchants who buy from abroad. There are no complaints against American packing methods here, and the usually admitted superiority of American goods and their quick transit across the border, along with the low average of breakage and damage, has aided largely in bringing about this leading trade position.

LOG EMBARGO REMOVED.

BRITISH COLUMBIA TEMPORARILY ALLOWS SHIPMENTS ABROAD.

Consul Abraham E. Smith, of Victoria, reports, under date of March 25, that an order-in-council has just been issued by the provincial government of British Columbia removing the embargo against export of all logs now in water. He adds:

This will greatly help the Canadian loggers, who have been seriously handicapped financially the past six months, owing to the great falling off in the demand for lumber in the Northwest, to secure funds to pay off a portion of their indebtedness and also enable them to start up logging camps in the spring.

American lumber mills on Puget Sound have had representatives in the province seeking to purchase British Columbia logs for some time, and the order lifting the embargo was no sooner issued than a boom of logs was at once dispatched to an American mill in Puget Sound. The rush of logs from British Columbia to mills in Ballard, Port Blakeley, and other points, will now be quite active, as the provincial mills have for some time been very anxious to export and realize on same.

A close estimate gives the value of logs now in water affected by this order at $500,000, and includes between 60,000,000 and 80,000,000 feet of fir, cedar, and spruce logs—varieties needed by Puget Sound mills. This relieves the tension in lumber circles in British Columbia and furnishes needed timber to mills in Puget Sound. It is understood the order will be canceled at end of season—in October—

and the embargo renewed, as the Government believes its permanence would retard the erection of lumber mills in the province.

DOMINION TRADE REVIEW.

BOTH IMPORTS AND EXPORTS SHOW GAINS OVER LAST YEAR.

According to figures printed in a Toronto journal, transmitted by Consul R. S. Chilton, jr., of that city, the foreign trade of Canada for the eleven months ended February 29, 1908, amounted to $589,755,974, an increase over the same months of 1906–7 of $30,156,704. The imports amounted to $328,321,453, and the exports to $261,434,521, an increase over the same period of the previous year of $24,798,784 in the imports and of $5,357,920 in the exports. The exports by classes show the following increases and decreases: Products of the mine and agriculture, increases of $2,410,000 and $14,700,000, respectively; products of the fisheries, forest, and animals and their products, decreases of $16,000, $1,700,000, and $12,150,000, respectively.

ITALY.

REVIEW OF TRADE.

STATISTICS OF IMPORTS AND EXPORTS FOR THE PAST TWO YEARS.

Consul James E. Dunning, of Milan, forwards the following report on Italy's foreign trade for the first eleven months of 1907, made by Clerk Siersdorfer of his post:

The Milan custom-house supplies the following statement of Italian exports and imports for the first eleven months of 1907, compared with the same period of 1906:

Articles.	Imports.		Exports.	
	1907.	1906.	1907.	1906.
Spirits, drinks, and oils	$8,620,612	$7,356,183	$21,086,218	$22,044,802
Tobacco, drugs, and spices	11,667,925	11,182,168	1,282,247	1,202,783
Chemicals, medicines, etc	18,899,143	16,662,418	11,048,954	11,653,544
Dyes and tans	6,679,047	6,158,388	1,166,601	1,574,320
Hemp, flax, jute, etc	8,386,222	7,782,558	12,416,950	12,981,171
Cotton and cotton goods	58,113,226	48,574,282	23,552,935	24,207,896
Wool, horsehair, and fur	25,347,943	22,155,647	5,419,795	6,051,366
Silk and silk goods	39,718,875	36,519,573	108,648,487	124,086,976
Wood and straw	22,982,527	20,104,480	9,294,164	8,754,445
Paper and books	7,760,861	6,425,026	4,666,961	4,190,806
Hides and skins	15,598,437	15,678,200	6,770,836	7,550,173
Minerals, metals, etc	110,008,502	84,485,616	10,250,647	11,112,328
Vehicles	12,279,344	6,288,586	3,918,895	2,390,840
Stoneware, glass, etc	55,329,401	52,440,148	13,694,758	14,843,926
Rubber and gutta-percha	4,918,063	4,658,455	1,420,445	1,596,041
Cereals	45,879,891	59,340,511	51,148,413	38,439,353
Animals and their products	27,930,731	25,580,392	31,233,969	32,572,919
Precious metals and coins	6,240,110	4,479,270	9,036,054	7,204,238
All other goods	32,130,524	21,800,836	927,925	1,460,103
Total	518,491,384	457,672,737	326,985,254	333,918,030

Imports into Italy and exports from Italy for the first eleven months of 1907 is as follows for six of the most important countries:

Country.	Imports.	Exports.	Country.	Imports.	Exports.
United States	$66,380,420	$39,737,735	Austria	$42,358,096	$26,289,688
Germany	89,193,406	49,989,123	France	43,040,351	35,014,440
Great Britain	85,983,263	26,150,728	Switzerland	13,124,965	57,446,084

[The United States Bureau of Statistics gives the value of the exports to Italy for the first eleven months of 1907 as $46,690,607 and the imports as $48,688,620.—B. of M.]

Italy's exports to South America, including Argentina, Brazil, Chile, Peru, and Paraguay, during the first eleven months of 1907, amounted to 112,912 tons. This does not include 1,556,228 hats and 200,736 umbrellas exported. Argentina bought 86,693 tons of this stock, together with 682,025 hats and 73,086 umbrellas. Italy's imports from South America during the first eleven months of 1907 amounted to 85,990 tons, not including 14 oxen. The imports of nitrate of soda from Chile, which is the chief article imported from South America, amounted to 38,281 tons. This amount is included in the above figures.

TRADE WITH THE UNITED STATES.

The following table shows Italy's imports from the United States for the first eleven months of 1907, in weights and values, as received by the consulate from Italian official sources:

Articles.	Tons.	Value.	Articles.	Tons.	Value.
Cotton-seed oil	2,843	$329,065	Automobiles	[a] 52	$28,950
Mineral oils	73,929	2,947,689	Mineral phosphates	66,330	446,988
Tobacco	14,872	3,531,514	Stone and earthen ware, etc.	4,800	238,162
Sulphate of copper	1,171	146,873	Coal	9,951	53,847
Solid paraffin	8,325	996,073	Rubber and gutta-percha	35	132,977
Chemicals, medicines, etc.	13,950	631,882	Cereals	175,277	6,292,958
Raw cotton	136,779	35,373,812	Salted meats and lard	4,885	1,416,234
Lumber	130,760	2,360,776	Fish	4,801	787,440
Shooks and staves	10,894	437,338	Pork fat	1,552	404,335
Hides and leather	250	227,547	Other fats	4,085	536,154
Raw copper, brass, and bronze	9,344	3,967,308	Sundries	62	88,201
Raw lead	3,132	271,937	All other goods	----------	1,636,061
Machines and parts	9,708	1,932,316			
Scientific instruments	285	970,983	Total	688,020	66,187,420

[a] 52 automobiles in number.

The following table shows Italy's exports to the United States in weights and values for the first eleven months of 1907, as received by the consulate from official sources:

Articles.	Tons.	Value.	Articles.	Tons.	Value.
Wines	8,525	$945,507	Kid gloves and hosiery	[a] 204,000	$94,184
Olive oil	10,567	2,190,743	Tanned hides and leather goods	5	14,475
Vegetable extracts	277	845,147	Machines and parts	123	26,441
Calcium citrate	2,051	514,538	Automobiles	[b] 40	174,472
Raw tartar	4,448	772,579	Marble, raw and worked	55,861	900,731
Chemicals, medicines, resin, perfume, etc.	21,998	769,298	Sulphur	4,197	77,972
Sumac	5,222	195,509	Macaroni and flour	40,977	3,081,245
Hemp, raw and carded	1,386	285,640	Oranges and lemons	99,629	1,744,527
Manufactures of hemp, linen, and jute	1,272	372,876	Dried fruits	9,030	1,411,795
Cotton textiles	212	352,611	Preserves	6,847	1,464,677
Wool and wool waste	88	44,583	Tomatoes in cans	8,310	641,532
Horsehair	161	161,541	Cheese	4,914	1,892,365
Raw silk and silk waste	1,763	13,923,020	Hats, unfinished	26	300,887
Silk ribbon and textiles	74	879,887	Coral, raw and worked	4	164,050
Other silk goods	6	76,621	Sundries	32	32,810
Furniture and woodenware	1,058	256,883	Hats, finished	[c] 3,318,800	1,089,099
Straw braid	594	389,860	Art objects	----------	367,472
Paper and books	561	395,650	All other goods	----------	2,575,971
Raw hides	945	320,537	Total	291,163	39,747,735

[a] Number of pairs. [b] Number of automobiles. [c] Number of hats.

EXPORTS OF FARM PRODUCTS.

FOOD SUPPLIES SENT TO ITALIAN RESIDENTS IN THE UNITED STATES.

Consul C. S. Crowninshield, of Naples, submits the following report on the opportunities for American farmers to supply certain food products now procured in Italy:

The large number of Italians and persons of Italian origin domiciled in America has, of late years, created a constantly growing demand for Italian vegetables and food products. Instead of the United States sending farm produce to Italy, the situation is quite the reverse.

A list of exports, relating solely to farm products, from this consular district for the calendar year of 1907 is appended:

Articles.	Total for the year 1907.	Articles.	Total for the year 1907.
Almonds	$4,445	Olives	$2,370
Artichokes	8,119	Olive oil	74,525
Beans	64,850	Onions	15,526
Cheese	531,800	Peppers	18,098
Cherries	329,397	Tomatoes	440,929
Chestnuts	54,307	Walnuts	77,883
Filberts	176,648	Wine	358,734
Garlic	70,183		
Hams	3,848	Total	2,239,852
Lupins	8,190		

Several of the articles mentioned in this list are not grown to any extent in America. The tomatoes, for example, are the small Italian variety. They are exported in the form of canned peeled tomatoes and tomato paste, so prized as a sauce for macaroni. The nuts, in quality, are peculiarly Italian. A good quality of garlic is already grown in some southern States. Italian cheese is a large item. It is mostly made from goat's milk, however, which may make its production impracticable in America. Wine sells so cheaply here that competition may be out of the question. The beans and onions can certainly be grown in America.

THE DEMAND SHOULD INTEREST AMERICAN FARMERS.

It seems probable that this trade, or a considerable portion of it, could be secured by American producers, but the tastes and wishes of the consumer must be carefully consulted and satisfied. The American farmer can compete successfully with the Italian farmer, as the latter, in spite of the advantage of cheap labor, has freight and duties against him.

In many cases American goods could be made to take the place of foreign articles. Italian cherries, for example, are said to be finer than those produced in the United States, but with care in production and preserving, the American goods might capture the market. The Italian market in the United States is only considered in this matter, for American farmers can not hope for an opening in Italy at present.

There are surely large sections of the United States where many of these articles can be produced to advantage, but the farmer must be made aware of the demand and the consumer persuaded to buy. It is simply a question of catering to a foreign taste which exists at *home.*

GERMANY.

EXPORTS TO UNITED STATES.

THE LARGEST VOLUME OF SHIPMENTS MADE DURING THE PAST YEAR.

In transmitting a tabulated statement of the values of the declared exports from Germany to the United States by consular districts for the calendar years 1906 and 1907, respectively, and the general totals of the four last calendar years, Consul-General A. M. Thackara, of Berlin, makes the following comments:

The value of the exports for last year, namely, $159,458,798, was the largest known in the history of the commercial relations between the United States and Germany. That the unprecedented flow of trade which has existed between the two countries during the last three years has received a check is, however, clearly indicated in the falling off of the ratio of increase in the values of declared exports in 1907 as compared with previous years. The exports to the United States in that year were only 4.1 per cent greater than in 1906, while the increase in 1906 over 1905 was 21.4 per cent and in 1905 over 1904 the increase was 13.4 per cent.

The value of the declared exports from this consulate-general during 1907, not including its agency at Sorau, was $15,915,418, an increase of 21.6 per cent as compared with 1906. The number of invoices consulated was 14,753, an increase of 2,413, or 20.1 per cent, over the previous year.

TIIE TRADE BY CONSULAR DISTRICTS.

The following figures show the declared exports from Germany to the United States by consular districts during the calendar years ended December 31, 1906 and 1907, respectively:

Consular district.	1906.	1907.	Increase or decrease.
Aix la Chapelle	$2,097,720	$2,134,765	+ $37,045
Annaberg	676,208	733,054	+ 56,846
Bamberg	1,637,972	1,334,745	− 303,227
Barmen	5,395,830	5,845,075	+ 449,245
Berlin [a]	14,153,068	17,122,866	+2,969,798
Bremen [a]	2,433,579	2,808,774	+ 375,195
Breslau	1,789,257	1,823,543	+ 34,286
Brunswick	3,594,876	4,415,110	+ 820,234
Chemnitz	10,711,915	13,700,105	+2,988,190
Coburg [a]	5,103,965	5,775,639	+ 671,674
Cologne	5,037,844	4,380,149	− 657,695
Crefeld	2,870,884	3,486,654	+ 615,770
Dresden	3,475,780	4,172,250	+ 696,470
Dusseldorf	3,755,869	4,464,725	+ 708,856
Elbenstock	1,776,958	1,527,108	− 249,850
Frankfort [a]	8,861,615	10,310,022	+1,448,407
Freiburg	1,345,417	1,394,635	+ 49,218
Glauchau	968,294	1,126,458	+ 158,164
Hamburg [a]	17,959,378	18,466,360	+ 506,982
Hanover	2,239,942	1,983,152	− 256,790
Kehl	1,596,594	2,008,045	+ 411,451
Leipzig [a]	11,438,830	11,158,380	− 280,450
Magdeburg	11,614,644	9,698,972	−1,915,672
Mayence	2,779,232	2,689,045	− 90,187
Mannheim [a]	5,697,202	5,571,621	− 125,581
Munich	1,340,928	1,442,133	+ 101,205
Nuremberg	6,061,467	7,211,374	+1,149,907
Plauen [a]	6,275,336	5,356,937	− 918,399
Stettin [a]	4,706,540	1,339,587	−3,366,953
Stuttgart	2,496,166	2,938,468	+ 442,302
Weimar	1,739,428	1,442,677	− 296,751
Zittau	1,510,264	1,596,370	+ 86,106
Total	153,143,992	159,458,798	+6,315,796

[a] Including agencies.

The following is a retrospect for the past four calendar years:

Year.	Total export.	Increase over previous year.	
		Amount.	Per cent.
1907	$159,458,799	$6,315,796	4.1
1906	153,143,002	27,009,803	21.4
1905	126,133,199	14,892,974	13.4
1904	111,240,225		

MARKET FOR LOCKS.

MODERN DOOR FASTENINGS WOULD PROBABLY SELL READILY.

Consul Will L. Lowrie, of Weimar, in reporting that Germany seems to offer an excellent field for modern locks of the American kind, adds:

The locks in use here are mostly of the double-turn variety, two revolutions of the key being necessary to send the bolt home. The keys are heavy and unwieldly. This applies especially to the house-door key, which is considerably heavier than the others. A large percentage of the people live in flats. The outside door is locked at a certain hour in the evening and the house key must be carried if one remains out after hours. If some firm could demonstrate the advantages of the American spring lock, with its small flat key, it is reasonably certain that an excellent market could be made. A list of the most important hardware dealers and building contractors in the district is forwarded [and is obtainable from the Bureau of Manufactures].

UNITED KINGDOM.

LARGE DECREASES IN IMPORTS, EXPORTS, AND REEXPORTS.

Consul-General Robert J. Wynne, of London, reports as follows concerning the foreign trade of the United Kingdom during the first three months of 1908, as compared with the same months of 1907:

The following statement shows the value of the imports, exports, and reexports into and from the United Kingdom for the first quarter of 1908 and its decrease from last year:

Description.	1908.	Decrease.
Imports	$253,618,903	$27,378,284
Exports of British products	160,075,848	8,903,797
Exports of foreign goods (reexports)	29,029,913	10,438,667
Total	442,724,664	46,720,748

The decline in the imports of raw materials in 1908 was $34,207,553, whereof cotton contributed to the value of $16,564,193, the low prices of the product being responsible for a large portion of this decrease. The imports of partly manufactured articles—copper, lead, tin, etc.—show a decrease of $2,917,199. Wheat imports were greater from the United States, Canada, Argentina, and Chile, and less from all other countries. Wheat flour imports were larger from the United States, Germany, and Canada, and less from other countries. The imports

of Indian corn were but a little more than one-half the imports in the 1907 quarter.

In the exports of British manufactures during the 1908 quarter the principal decreases were as follows: Cotton fabrics, $3,386,982; woolen goods, $1,126,166; other textiles, $1,927,976; iron and steel, $3,815,998; other metals, $1,476,292; total decrease in these five articles, $11,733,414. Smaller quantities of cotton piece goods were exported to all oriental countries in the 1908 quarter, with the exception of Japan, whose requirements were larger. The principal increases in the exports of British manufactures during the 1908 quarter were as follows: Machinery, $1,200,176; new ships, $2,015,509.

FRANCE.

STATISTICS OF THE TRADE IN TOBACCO AND MATCHES.

Consul-General Robert P. Skinner, of Marseille, has prepared the following summary of the tobacco trade of France and the operations of the Government monopolies in tobacco and matches:

The importations of leaf tobacco into France have been as follows during the last three years, in tons:

Origin.	General commerce.			Special commerce.[a]		
	1907.	1906.	1905.	1907.	1906.	1905.
United States	15,886	15,530	18,116	12,922	14,827	19,007
Algeria	4,729	3,627	1,864	3,930	3,403	1,701
Other	17,444	12,076	14,411	11,518	6,634	9,666
Total	38,059	31,233	34,391	28,370	24,864	30,374

[a] Special commerce relates to quantities entered for domestic consumption.

The annual report of the director-general of the state tobacco monopoly has just been made public, and covers the transactions of the year 1906. He states that during that year purchases for the account of the monopoly were made as follows:

Variety of tobacco.	Quantities.	Average price per 220 pounds.	Variety of tobacco.	Quantities.	Average price per 220 pounds.
	Tons.			*Tons.*	
Leaf tobacco from Kentucky, Maryland, Ohio, and Virginia	12,701	$18.18	Cigars made abroad, 16,506,936 at 250 per kilo (2.2 pounds)	66	[a] $44.39
Leaf tobacco from Habana, Sumatra, Java, Brazil, Levant, Santo Domingo, Manila, and Samsun	3,509	41.67	Cigarettes made abroad, rate of 1,000 per kilo	68	[a] 3.83
Leaf tobacco from various other sources, Hungary, Ukrania, Astrakhan, Java for scaferlati, Paraguay, Alsace, and Bispat	4,278	14.89	Foreign-made scaferlatis (English, American, Ottoman)	4	[b] 1.49
			Total	20,626	

[a] Per 1,000. [b] Per kilo.

In 1906 the receipts of every nature amounted to $88,687,216, an increase of $1,433,030 over the preceding year. The net expenses in 1906 were $15,931,141, or $225,928 in excess of the corresponding expenses for the preceding year. The sales of manufactured tobacco *to the public* during 1905 and 1906 were as follows:

Variety.	Sales in 1906.		Sales in 1905.	
	Tons.	*Per cent.*	*Tons.*	*Per cent.*
Cigars	2,487	6.32	2,584	6.59
Cigarettes	2,521	6.40	2,258	5.75
Scaferlatis	28,388	72.07	28,497	72.62
Rolls and carrots	1,162	2.95	1,184	3.02
Powder	4,830	12.26	4,715	12.02
Total	39,388	100.00	39,238	100.00

The production of domestic tobacco was authorized in 26 departments, with the following results as compared with the preceding year:

	1906.	1905.
Planters	54,470	53,750
Land cultivated (acres)	37,927	39,439
Crop:		
Tons	16,189	28,006
Pounds	35,690,155	61,614,900
Value of crop	$2,906,827	$4,949,381
Culture trial expenses	$167.85	$242.37
Price per 220 pounds (average)	$17.95	$17.76
Yield in pounds per hectare (2.417 acres)	2,323	3,858
Value of yield per hectare (2.417 acres)	$189.38	$310.09

THE MATCH MONOPOLY.

In 1906 the total receipts of the French Government from the sale of matches amounted to $7,297,513, or $359,278 in excess of receipts for 1905. The expenses during 1906 amounted to $2,009,838, or $197,771 in excess of expenses during the preceding year.

Three classes of matches were delivered to the public: (1) Ordinary wooden sulphur matches which ignite by friction upon any surface; (2) wooden safety matches which ignite by friction upon a special surface: (3) wax matches. The average consumption of matches per capita in France was 1,058 in 1906, representing an expenditure of $0.218, of which amount 18 cents returned to the treasury.

BELGIUM.

DECLINE DURING THE FIRST THREE MONTHS OF THIS YEAR.

Consul-General Ethelbert Watts, of Brussels, advises that the comparative statement of special commerce (excluding reexport trade) for the first three months of 1907 and 1908, shows a decrease for this year. He summarizes the statistics as follows:

Importations for the first three months of 1908 amounted to 744,993,000 francs ($143,783,649), against 844,209,000 francs ($162,932,337) for the corresponding period of 1907, a decrease of 99,216,000 francs ($19,148,688).

Exportations for the same period in 1908 were 601,925,000 francs ($116,171,525) and 609,514,000 francs ($117,636,202) for 1907, a decrease of 7,589,000 francs ($1,464,677).

The tonnage arrivals in 1908 were 3,142,904 tons, against 3,246,622 tons in 1907, a decrease of 103,718 tons. The departures in 1908 were 3,129,904 tons, against 3,333,858 tons in 1907, a decrease of 203,954 tons.

SWITZERLAND.

STATISTICS OF LAST YEAR'S PURCHASES FROM FOREIGN COUNTRIES.

Consul A. Lieberknecht, of Zurich, reports that in 1907 the total Swiss imports in round figures amounted to $310,577,000. Among the leading articles he names the following:

Articles.	Value.	Articles.	Value.
Animals (43,763 oxen, 90,235 hogs, 115,240 sheep, and 14,807 horses; of the latter 4,578 were for slaughtering purposes)	$10,796,000	Fruit and vegetables	$5,500,000
Books	3,461,000	Grease and fats for technical purposes	4,807,700
Butter	1,826,000	Hides and skins	7,596,000
Cereals	32,692,000	Instruments	2,692,000
Chemicals	6,154,000	Iron, iron ware, and machinery	28,654,000
Coffee	2,673,000	Lard and other edible fats	923,000
Coffee surrogates	269,230	Poultry	1,788,000
Copper and copper ware	5,769,000	Seed and plants	4,980,700
Coal	16,731,000	Sugar	5,576,000
Cotton, raw	9,077,000	Silk, raw	23,673,000
Eggs	2,942,000	Textile wearing apparel	9,577 000
Fish	442,300	Wine, in barrels	8,346,000
		Wool, raw	4,000,000
		Wool manufactures	10,846,000

With the exception of wool manufactures all the articles show an increase over 1906. That the chocolate industry did not suffer any in 1907 is plainly shown by the heavy increase in the import of cacao beans. In 1907 their weight was 7,100,000 kilos (kilo=2.2 pounds), while in 1906 it was only 5,500,000.

RUSSIA.

DECREASED EXPORTS AND INCREASED IMPORTS LAST YEAR.

The statistics of the foreign trade of Russia for 1907 have not been issued in a completed form, but the British consul at St. Petersburg has sent a report to his Government, based on preliminary and partial figures, sufficiently approximate to furnish a very good idea of the state of business last year. The following is an abstract of the report:

Generally speaking, conditions were more favorable than in 1906, particularly as regards agriculture. The harvests were better, but local resources had been so thoroughly exhausted by the previous famine that the population was not able to benefit as much as it otherwise would by the larger supplies. In the industrial branches there was fair activity, chiefly in the textile sections, the most depressed trade being the metallurgical. The naphtha industry showed signs of improvement and the sugar industry was also very prosperous. The exports and imports for the year, as far as the statistics go, were as follows:

	Exports.		Imports.	
	1907.	1906.	1907.	1906.
European	$500,602,255	$513,220,000	$339,204,783	$317,558,000
Asiatic	38,274,000	49,253,000	43,345,000	40,338,000
Total	538,876,255	562,473,000	382,549,783	357,896,000

The exports across the European frontier declined 2½ per cent and over the Asiatic border as much as 25¼ per cent, but imports from Europe went up 6¾ per cent and from Asia 7½ per cent. The de-

crease in exports occurred in food products and manufactured articles, and it was also in these branches that an increase took place in imports. On the other hand, both the export and import of raw and half manufactured materials shows a substantial increase. In animals there was a decline both in exports and imports. These figures seem to argue a considerable increase in home consumption, but evidently the full effects of the better conditions had not time to reflect themselves in the year's foreign commerce.

TURKEY.

MARKET FOR AMERICAN SOAPS.

OPPORTUNITY TO SELL GOOD ARTICLES FOR LAUNDRIES.

Consul-General Edward H. Ozmun, of Constantinople, furnishes the following information concerning the soap trade of Turkey and the opportunity which exists for certain American soaps in that market:

The quantities and value of soap imported into Turkey during the year ended March 13, 1906, the latest official statistics obtainable, and the countries whence imported, are shown in the following statement:

Whence imported.	Ordinary.		Toilet.	Whence imported.	Ordinary.		Toilet.
	Pounds.	Value.	Value.		Pounds.	Value.	Value.
Greece	2,866,202	$148,386	.....	Tunis	238,077	$10.144	.....
France	1,252,601	51,455	$9,780	Germany	.....	.....	$5,686
England	514,113	32,626	19,393	All other countries	.....	562	1,420
Austria	75,201	3,800	13,180				
Egypt	236,944	12,906	.....	Total	5,365,760	269,371	51,130
Italy	182,622	9,492	1,671				

The average annual olive oil crop in the Levant, including Greece, is nearly 100,000 tons, of which two-thirds is produced in Turkey. It is estimated that about 25 per cent of the product of Turkish oil is used in soap making. Native soap, as also that imported from Greece, is used by the poorer classes both for laundry and toilet purposes. It is made from different grades of olive oil with the admixture of soda and potash.

FOREIGN SOAPS COMING INTO USE.

All laundry work in Turkey is done by the washerwoman, and in the most primitive manner. Hot water is always used, and from the moment the soap is put into the tub it never leaves it, always remaining in the hot water, and never melting. It is difficult to get people in this country to change from what they have been accustomed to, although within recent years certain foreign soaps have gradually come into use. Native soap is made up in rectangular blocks weighing about 1¼ pounds each.

There is imported into Constantinople from Marseille 25 or 30 tons of white soap annually, made up in bars of 100, 150, 250, 500, and 1,000 grams (1,000 grams=2.2 pounds) and packed in cases. The qualities imported contain 50 to 70 per cent of fat, and the price

varies from 40 to 70 francs per 100 kilos ($7.72 to $13.51 per 220 pounds) free on board ship at Marseille.

One brand of laundry soap has, by judicious advertising, taken a firm hold on the market. It can be used with cold water, and is beginning to be adopted where native soap held full sway. It is comparatively cheap, saves time, and is even used by some of the poorer classes for toilet purposes. This soap is made up in bars of two cakes joined, three bars in one box containing advertising matter in French and Turkish. One case is made up of 48 boxes and, notwithstanding local imitations, besides the competition of other soaps made up in a similar manner, its sales were not less than 7,000 cases during last year. It is retailed at 18 cents per box of three bars.

There are still possibilities for a good laundry soap of similar quality in the hands of a pushing agent, but a little money would have to be spent in newspaper advertising and putting printed posters around the town.

SOFT AND TOILET SOAPS.

It is estimated that the annual imports of soft soap reach 1,800 barrels, containing about 450 pounds each, besides a considerable quantity in tins and drums containing from 1 pound to 112 pounds each. This is imported principally from England, although France has a considerable share in the trade. That coming from Marseille is very dark in color, and is quoted at 36 francs per 100 kilos ($6.95 per 220 pounds). The English is much lighter in color, and the two first qualities cost about 12s. 6d. and 11s. 6d. per hundredweight ($3.04 and $2.80 per 112 pounds) c. i. f. Constantinople.

Most of the higher-priced toilet soaps are imported from France. England has a good share with one popular make, and cheaper articles come from Austria and Germany. Our share is insignificant.

There is a large business to be done in cheap toilet soap. One firm alone is selling 500 dozens of toilet soap per month, put up in fancy boxes, containing 6 cakes each, which are sold for 20 cents. This line, however, is generally made up in boxes containing 3 cakes, and is retailed at about 12 cents per box. Correspondence is invited with American manufacturers, who will be put in touch with pushing agents for any of these particular lines. [Samples of the various soaps, which accompanied the consul-general's report, may be inspected in the Bureau of Manufactures.]

PHOTOGRAPHY IN CONSTANTINOPLE.

FRENCH INVESTIGATION OF THE TRADE IN TURKISH CAPITAL.

The bulletin of the French Chamber of Commerce in Constantinople contains the following report on the trade in photographic apparatus and supplies in Constantinople, reproduced in the Moniteur Officiel du Commerce and translated by the Bureau of Manufactures:

The natural conditions in this country are very favorable for photography. The light is magnificent and the sky splendid. In Egypt special precautions must be taken on account of the excessive heat, which sometimes causes the gelatin to melt; in Turkey there is nothing to fear on that score.

The number of photographers has increased enormously. Thirty years ago there were only three or four at Pera; at present they are too numerous to count and are found everywhere—at Pera, Galata, Stamboul, and the suburbs. There is naturally very keen competition among them, and as a consequence they are compelled to give preference to the apparatus and supplies sold at the lowest prices.

The number of amateurs, which was negligible in the past, has increased considerably during the last eight or ten years. Almost everybody is taking pictures. The Mohammedans, who were greatly opposed to this diversion up to a few years ago, have now taken it up seriously, and some photographers of real merit are found among them. And finally the tourists who come to Turkey are all equipped with photographic apparatus.

During the last year, however, the trade in photographic supplies has been perceptibly slow. Is it due to competition and the increased number of dealers? Persons familiar with the situation are inclined to attribute this falling off in the trade to the increased cost of living. Photography involves considerable expense for amateurs, who are therefore not apt to indulge too freely in that pastime. Besides, the number of serious amateurs at Constantinople is rather small. Many of them have their films developed by professional photographers, as is evident from the large sale of photographic paper in large sheets, which are bought only by professional photographers, who effect a saving in cutting them into small sizes.

Still, in spite of all these drawbacks, the sale of photographic apparatus and supplies in this city is of considerable importance. It is not believed, however, that it is ever going to attain a very large sum, in view of the fact that the articles involved are of comparatively small value.

GERMANS PROFIT BY ADVERTISING.

Apparatus.—The apparatus used by the professional photographers are equipped with German lenses. The Germans advertise enormously, advertisements of their apparatus being found in almost every paper. This is one of the causes of their success.

Amateurs use hand cameras or kodaks, which up to a short time ago were intended only for films, but which are now made both for films and plates. But, as said above, the number of amateurs is rather limited. The majority of them are in search of cheap apparatus, and as a result the German cameras so well advertised are in greatest demand. German manufacturers produce apparatus at prices which defy competition, as low as 6 francs ($1.16) each.

Films.—Films come in rolls of a dozen exposures each; double rolls, or those of six exposures, are not in demand. The objection the dealers have to the films is that they are dated, the date indicating the period for which they are guaranteed by the manufacturer. This makes it impossible for the dealers to sell films whose guaranty period is near expiration, and consequently the retailers can not carry large stocks. In view of the large number of kodaks in use and the time required for a voyage from Paris to Constantinople, it is evident that the dealers would run a considerable risk in carrying a complete assortment of films.

Plates.—These are furnished almost entirely by France. They come in boxes of 12, and 6 for the larger sizes. The sale of French plates could be greatly increased by reducing the price and affording greater facilities to the dealers.

Some German manufacturers have introduced a plate bearing an American flag and sold as of American origin. These plates are bought to some extent by the professional photographers on account of their low price. Other German plates, sold as such, also find some buyers.

Sensitized paper.—This article is also imported almost entirely from France, being furnished by the same houses that furnish the plates. Paper is sold in packages of 6 and 12 sheets, and is divided between nitrate and bromide papers. The former has the larger sale, but the latter is coming more into fashion.

FRANCE AND GERMANY FURNISH SUPPLIES.

Accessories.—The numerous accessories, such as lamps, trays, printing frames, drying racks, etc., come from Paris and Germany.

Chemicals.—The most used are hyposulphite of sodium, bromide of potassium, carbonates of sodium and potassium, some acids, etc. While in the case of most chemicals it is impossible to compete with the low prices of the German chemicals, some chemicals are imported from Paris and Lyons. Developing

and fixing solutions, which are so important in photography, are mostly prepared here from imported chemicals, but some of them are imported from Europe, amateurs having more confidence in European brands. These come from Paris and Germany. Chloride of gold comes from Paris; the importation of magnesium is prohibited.

Cardboard.—Photographers' cardboard, passe partout, and other cardboard products are imported largely from Vienna, where the conditions for their manufacture are most favorable, and to some extent from Berlin.

Dealers.—There are four large houses dealing in photographic apparatus and supplies in Constantinople (three at Pera and one at Stamboul), one of them being a French house. Some small merchants also carry photographic supplies.

Packing.—In the case of articles of so delicate a nature, where packages can not be opened to ascertain partial damage, careful packing is very essential. Firms shipping in large and heavy boxes seem to invite disaster, as the porters here are very rough in their handling of boxes, especially if they are very heavy, even when they bear the inscription "fragile." On this account small, light, and well-packed cases are necessary.

Terms.—No firm charges for packing. The Germans sell f. o. b. Constantinople, on six months' credit. They also extend other facilities to their customers. These are the best means to keep customers, and French firms are urged to extend the same facilities. To resume, it may be said that France occupies a good position in this trade in Constantinople, but its sales could be greatly enlarged.

[Names of dealers in photographic supplies at both Constantinople and Smyrna may be secured from the Bureau of Manufactures.]

EGG TRADE AT SMYRNA.

EXPORTATIONS FROM TURKEY IN ASIA INCREASING.

Consul Ernest L. Harris states that within recent years an entirely new industry has sprung up at Smyrna in the exportation of eggs, and it is rapidly becoming a source of considerable profit to the villagers and farmers in that part of Turkey. He gives the following trade particulars:

The success achieved along this line, however, is but nominal, compared to what the results would be if a system of poultry raising were introduced all over the country. There are few farmers in this part of Asia Minor who raise poultry as a source of income, as far as the production of eggs is concerned.

There are some ten firms interested in the egg trade at Smyrna, but the bulk of the business, comparatively speaking, is in the hands of one of these firms. This firm has a number of active agents whose business it is to visit the villages in the interior of the country and buy up all the eggs possible for shipment to Smyrna. A part of these eggs are consumed in Smyrna, while a part are shipped to Europe in cases packed by experts. In 1907 this firm shipped 7,112 cases, each containing 1,440 eggs.

The total export of eggs from Smyrna during 1907 amounted to 24,322,372, valued at $264,573. France took $102,300 worth, Greece $63,228, Austria-Hungary $48,312, Italy $32,697, and Germany $4,295. The total number exported during 1900, 1901, and 1902 combined only amounted to 1,132,125 eggs.

The great demand for eggs abroad naturally creates a scarcity and fluctuation in prices at home. During that part of the season when there is the greatest foreign demand the price of eggs rises to 2 cents each, when they can ordinarily be bought for 1 cent each, or even less.

CHINA.

TSINANFU TRADE OUTLOOK.

GENERAL BUSINESS CONDITIONS NOT FAVORABLE AT PRESENT.

Consular Agent William B. Hamilton, in furnishing the following information through Consul-General John Fowler, of Chefoo, relative to conditions at Tsinanfu, the capital of the province of Shantung, reports that the very poor autumn crops have had a depressing effect on trade, the sales of foreign goods, except necessities like oil and cloth, being reduced about one-half this season:

Foreign merchants hope to do an export business in sheep and goat skins, hides, straw braid, and silk. Sheep and goats in considerable numbers are pastured on nonarable land in the hill region, extending 200 miles to the southeast of Tsinanfu and 80 miles south and southwest. Cattle for farming purposes are found 20 or 30 in each village with a population of a hundred families. They are cheaper than for several years back because of the shortage of fodder.

There is room for the indefinite expansion of the straw-braid business, as half the land is sown in wheat every year, and the straw is generally suitable therefor. The people have not yet learned the art of braiding it, though spreading westward from Chefoo it has been taken up, village by village, until people north of Chingchou are acquiring the ability to braid it.

RAW SILK—TRAVEL AND TRAFFIC.

The mulberry grows well in this section, there being extensive orchards 20 miles to the northeast of the city. The main silk business is, however, done at Choutsun. For some time past a school for sericulture has been going on at Chingchou, being at first under Japanese instructors. Another Japanese, trained under American teachers in Japan, was in Government employ here for a couple of years and introduced new silkworms from Japan, and a new sort of mulberry tree from central China. He also constructed an oven for the killing of the cocoon by heat, in accordance with Japanese methods, instead of by scalding.

The Tsinan-Yangchiakou canal has been found too shallow for the steam launches brought here from Chefoo. It is still extremely useful as a waterway for the bringing of salt, grain, lumber, and fuel to the city. Much oil from Chefoo is also brought in that way. It is not, however, in condition to be a formidable competitor to the Tsinan-Tsingtau railway, and the latter maintains its freight rates, while cotton is often wheeled along in barrows, in the old-fashioned style, for considerable distances parallel to the line. Passenger rates have recently been advanced 10 per cent on third-class fares. The road is much patronized by third-class passengers, even the platforms of the cars often being crowded.

FOREIGNERS IN TSINANFU.

Japanese traders are considerably in evidence here. Probably 30 per cent of the goods exposed in foreign stores are of Japanese origin. They are doing a large business in the line of medicines, mostly patent, having many agencies in the city, and they are establishing

branch stores in the various cities and larger market towns in this region. Within the past year or two I have met Japanese selling medicine and soap away out in places where no other trader would think of going. A company here has secured an agency for a large Philadelphia producer of medicines.

As to American merchants, one company is said to be doing some business in cotton, having a small godown in the settlement, with headquarters in the city; another is said to be doing business in hides, skins, etc., and an American sewing machine company has a Chinese agent here. The Germans are, however, introducing a cheaper sewing machine. The Japanese have also brought in machines.

A large tobacco company has sent its agents far and wide throughout this region, and has spent thousands of dollars placarding posters everywhere—covering the entrances to the cities even with a score or more of brilliant posters massed together. They are doing a large business. An American agent, representing a Chinese life insurance company, frequently visits the city.

A German bank has just completed a handsome structure for banking and residential purposes, which, with the new German consulate adjoining it, is a very striking evidence of German activity in this section. The new bank building is evidently in anticipation of the construction of the Tientsin-Chinkiang railway. The main business of the bank is still done in the city. There are four German firms represented here by Germans.

STRAW-BRAID TRADE.

TSINGTAU OUTPUT FOR PAST YEAR—PRESENT SLOW MARKET.

Consul Wilbur T. Gracey transmits the following report regarding the Chinese straw-braid trade for the year 1907 and the months of January and February, 1908, translated from a German newspaper in Tsingtau:

A review of the Shanghai customs daily returns shows that a total of 42,000 packages of braid went to that port from Tsingtau during 1907. To get the total exports some 3,400 more packages should be added for exports by direct steamers. This includes shipments by Chinese. The annual German report concerning the colony shows a small gain in piculs (133⅓ pounds), the figures being 60,250 against 58,800 in 1906. It is probable that the value in 1907 was below that of 1906, despite the greater weight exported. In 1906 prices were unusually high, and fell during 1907, so that Chinese exported more than usual to Shanghai, trying to find a better market. The result is that European firms did less, native firms more.

It is to be hoped that conditions will better in 1908, but the good times of 1906 are hardly to be expected to return. At that time buyers even worked on Sundays in order to buy what had arrived late on Saturday. With the pressure brought to bear at the request of buyers, full-length braid is beginning to arrive, and so more certainty will be brought into the trade.

The first two months of this year are fairly satisfactory, when it is considered that the season was interrupted by Chinese New Year. Dealers in the interior passed this time better than was expected.

Considerable dealing was done in 7-end split and Laichow mottled, so that prices were stiff. Shansi mottled was quiet, little cargo arriving. Pearls were so scarce that no business was done.

A few orders were booked for white plain braids; the supply is so small, however, that the market was unaffected. Four-straw rustics were lively in December, but very quiet since, with prices unchanged. A few Tuscans went in January, but none in February. Prices of colored plain braids dropped, as the demand was not clearly up to supplies.

STOCKS OF GOODS IN SHANGHAI.

QUANTITIES OF MERCHANDISE ON HAND AT BEGINNING OF THE YEAR.

Consul Gracey also transmits the following article copied from a recent local newspaper in China:

An interesting series of figures has been issued by the Chamber of Commerce of Shanghai, containing the amount of goods stored in the warehouses of firms within the Settlement on December 31, 1907. Notices had been sent to the various hongs requesting this information with a view to compiling statistics of stocks of manufactured goods and metals in port as nearly as could be ascertained, and the results are interesting. A few notworthy facts can be culled from the columns of figures.

Under the heading of "goods unsold and sold but uncleared" are given the quantities of various materials, of which the most important totals are: Gray shirtings 1,112,914 pieces; white Irishes 215,565; T cloths 146,269; drills 710,334; jeans 180,802; sheetings 6,712,291; printed cottons 705,755; fancy woven cottons 91,125; cotton Italians and lastings 2,017,337; kerosene oil 4,673,825 gallons. Under the heading "sold and paid for and stored by Chinese" are the following figures: Gray shirtings 133,838 pieces; white shirtings 90,828; white Irishes 162,964; drills 25,648; jeans 38,150; sheetings 181,285; printed cotton 18,232; fancy woven cotton, 1,300; kerosene oil 467,200 gallons. Among the details to be noted are that the oil from Borneo exceeds that from America by a large amount, the figures being America, 1,033,505; Borneo, 2,268,635; Sumatra and Langkat, 1,371,405. Of the drills the British figures totalled 66,220 pieces. while the American were 563,185.

JAPAN.

NEW SUGAR TAX RATES.

CONSUMPTION CHARGES BY GOVERNMENT ARE CONSIDERABLY INCREASED.

Consul-General Henry B. Miller sends from Yokohama a published statement that the amendment increasing the Japanese sugar-consumption tax was passed by Parliament and was put in force on February 22. The statement says in part:

The rate on "first quality sugar, under No. 8 in color of Dutch standards, and molasses" is raised from 1 yen to 3 yen per 100 kin (1 yen=49.8 cents; 1 kin or catty=1⅓ pounds). The rate on "second quality, between Nos. 8 and 15 in color of Dutch standard" increased from 1.6 yen to 5.5 yen per 100 kin. The rate on "third quality, between Nos. 15 and 20 in color of Dutch standard, and syrup" is advanced from 2.2 yen to 8.50 yen per 100 kin. The rate on "fourth quality, exceeding No. 20 in color of Dutch standard, and sugar candy" is increased from 2.8 yen to 10 yen per 100 kin.

The object of the Government in promulgating this law in such haste is to check the heavy importation of sugar in anticipation of the increase of the tax, the amount of sugar landed having recently shown a marked increase. On the other hand, seeing the possibility of the bill passing through the House of Peers, the sugar refineries have shown great activity of late. For instance, the Tokyo, Osaka, and Moji factories of the Japan Sugar Refining Company

have been working day and night of late, and just before the amendments were promulgated the company deposited with the Government bonds to the value of 2,000,000 yen for the purpose of carrying out the examination of sugar in stock. By this means the sugar will not be subject to the new tax. On the Shanghai market Hongkong sugar has risen in price by 15 tael cents, and the Japan Sugar Refining Company has made a contract for the sale of about 600,000 bags for China, which it is estimated will bring in a profit of about 1,000,000 yen. The company intends to try and capture the market in China.

It is said that the company's factories will be closed down for a month or two, in consequence of the large stocks now held by virtue of the night-and-day work, to avoid the new taxation.

REGISTRATION OF TRADE-MARKS.

PRECAUTIONS NECESSARY TO GUARD AGAINST INFRINGEMENT.

The Board of Trade Journal of London prints the following concerning trade-marks in Japan:

The board of trade desire to remind owners of marks used in the Far East of the risks they run by failing to register their marks in Japan, and of the necessity of taking all practicable steps to protect their interests after registration. They also desire to direct the attention of all firms whose products, bearing marks duly registered, are on sale in Japan, to the precaution—as one means of securing their marks against infringement—of adding on their labels in Japanese characters the words "Registered trade-mark." This precaution has been suggested by His Majesty's embassy at Tokyo with a view to preventing infringers of marks from setting up as a defense that they were ignorant of the fact that the trade-mark in question was a registered one, which is understood to be a valid defense in a criminal action in Japan.

SIAM.

PEPPER CROPS, EXPORTS, AND MARKET QUOTATIONS AT BANGKOK.

Consul-General John Van A. MacMurray, of Bangkok, finds that, according to the customs-house figures, the total quantities and values of pepper of all sorts exported from Siam have been as follows:

Year.	Pounds.	Value in United States currency.
1904	3,170,567	$351,546
1905	2,208,997	261,182
1906	2,996,091	300,405
1907	3,307,784	285,277

In the calendar year 1907 1,633,000 pounds, valued at $120,919, were shipped to Singapore; 532,000 pounds, worth $32,605, to Hongkong; 145,000 pounds, worth $22,089, to England, and 997,000 pounds, worth $109,663, to Europe.

The following data concerning recent crops of white pepper are from private sources. The prices refer to wholesale quotations per pound in English pence (2 cents), c. i. f., Bangkok to London: In 1902–3, 700 tons, 8½ to 9¼ pence; 1903–4, 1,000 tons, 8⅛ to 8 3/16 pence; 1904–5, 700 tons, 6 1/16 to 7¾ pence; 1905–6, 1,050 tons, 5¾ to 6 15/16 pence; 1906–7, 1,000 tons already marketed, and 100 tons estimated as still to come in, price 5 pence and a trifle under; while for the 1907–8 crop 900 tons is estimated as the probable yield, with the price probably below 5 pence.

STRAITS SETTLEMENTS.

DECREASES SHOWN IN BOTH THE IMPORTS AND EXPORTS.

Consul-General, Thornwell Haynes, sends from Singapore the following statistics, showing the Straits Settlements' value of imports and exports for the quarter ended December 31, 1907:

The foreign trade of Singapore amounted to $31,545,000; Penang, $11,527,000; Malacca, $6,877,000. The total value of imports for the December quarter of 1906 was $46,310,000, showing a decrease in the last quarter of 1907 of $3,639,000.

The exports for the last quarter of 1907 were: Singapore, $25,267,000; Penang, $11,032,000; Malacca, $515,180. The total figures in the same quarter in 1906 were $43,432,000. The value of exports for the December quarter, 1907, shows a decrease of $618,000.

BRITISH INDIA.

VALUE OF CALCUTTA'S FOREIGN TRADE LAST YEAR.

Consul-General William H. Michael, of Calcutta, advises that the value for nine months, April 1 to December 31, 1907, of the seaborne import trade of British India, including Government treasure and stores, amounted to $444,225,020, of which private merchandise represented $314,246,705. The total export trade for the same period including government treasure and stores, amounted to $466,073,116, of which foreign merchandise reexported, represented $9,560,052, and Indian merchandise, $441,783,265. The gross amount of import duty collected, including salt, amounted to $17,948,939, and export duty, $1,873,109.

MOROCCO.

VAST TRADE POSSIBILITIES WHEN THE COUNTRY IS DEVELOPED.

George E. Holt, vice-consul at Tangier, Morocco, sends the following account of trade conditions in that country, with its $25,000,000 of imports, and what may be expected when real development begins:

It seems strange that in their keen search for foreign fields for their products American manufacturers and exporters have thus far almost completely overlooked Morocco, which is near enough to Europe to be a part of it, and yet which is as far away from European control as though it were at the antipodes. While Sultans have come and gone, England has been shipping millions of pounds' worth of cotton and candles and other things for the people of Morocco to consume; France has been sending sugar and silk and many other commodities, cash against bill of lading; while Germany has found a market worth going after. Morocco is well worth the attention of American exporters. It has a choice climate, fine scenery, great wealth of earth and sea and sky, vast supplies of precious metals, and the soil has never been more than scratched by the crude wooden plows of the people—a soil that will give three crops a year. There are warm winds and sunshine for three hundred of the three hundred and sixty-five days in the year; 300,000 square miles of fertile farm

land or grazing land, broken by majestic mountains or swept by foothills, crossed by rivers, and bounded by the sea on two sides. There are vast forests and valuable shrubs, and the sea is generously supplied with millions of fish.

THE IMPORT TRADE—LACK OF TRANSPORTATION FACILITIES.

The import trade of Morocco touches the $25,000,000 mark. Of this amount, the bulk goes into the coffers of the merchants of England, France, and Germany, with the first two at present struggling for supremacy. Despite the many centuries of life, Morocco has not been developed—it is almost virgin territory. Its forests and mines are intact. No railroads, no electric transportation lines, no telephones, no telegraph to speak of, electric lights of more or less uncertain existence in one town; the coast known, the interior a wilderness where even the Sultan dare not go. And eight to ten millions of people living in primitive style. Why? Principally because their opinions differ from those of Europe.

While the interior of Morocco is as I have represented it, the coast is more or less accustomed to European methods—the people eat French sugar, drink English tea, and wear Manchester cottons. Some of them tell the time of day by the dollar watch. In the eight port towns and vicinity there are quite enough people to satisfy ordinary demands as regards the opening of trade with America. The interior may be kept as a reserve, to fall back upon when the 2,000,000 people on the coast have stocked up with sewing machines, phonographs, clocks, cameras, etc. The commodities of everyday life form a group of imports which represents fortunes in profits. Cotton goods from England alone amount to $4,000,000 a year. Sugar is imported to almost the same figure annually. Candles reach nearly half a million dollars a year, and tea three-quarters of a million dollars.

A hindrance of great importance to the development of internal commerce is the entire lack of any practicable means of transportation and communication. When it is noted that in a country covering more than 300,000 square miles there is not a single railroad or other means of mechanical transportation, the fact that internal commerce is restricted does not seem strange. Morocco, exposed on the north to the Straits of Gibraltar and the Mediterranean and on the west to the Atlantic, offers every inducement to the development of commerce; but up to the present time the policy of discouragement of foreign enterprise has kept out would-be developers—a policy which has been greatly assisted by the disturbed political conditions and lack of law.

But foreign capital has managed to secure a foothold along the coast of the country. Tangier is the northern commercial center. The west coast has many, such as Laraiche, Rabat, Casablanca, Mogador, Mazagan, and Saffi, all of which have a more or less flourishing import and export trade, fed by the coastal and interior area within a radius of perhaps 30 or 40 miles. Outside of these pocket-like areas the country is self-supporting, although, necessarily, small quantities of tea, candles, sugar, and cloth seep inland. Fez and Marrákesh (Morocco), the northern and southern capital cities, attract some little import trade, which, however, goes direct from the nearest port, and has no developing influence upon the 150 or 200 miles of intervening territory.

There are in Morocco no roads which could properly be called such, and not more than a dozen bridges—and those only over small streams where the most simple forms of construction could be employed. Rivers must be forded, and when the water is high, as is often the case, there is nothing to do but wait till it subsides. Aside from the occasional fandak (inclosures where animals may be stabled) there is no facility for "putting up" except in the open air. The traveler in Morocco must carry all things with him and prepare to sleep where he may.

METHODS OF TRANSPORTATION.

There are six methods of transportation in general use in Morocco; or, perhaps, it would be better to say that there is but one method, with six variations. In order of their importance they are: Mule, horse, donkey, camel, woman, man. Of these the mule, horse, and camel may be classified as animals which, generally speaking, are used to transport heavy loads over long distances, while the others are for loads of less weight to be carried over less distance. The mule can carry all that can be piled upon it, say 600 pounds, for an unlimited distance, as can also the camel. The horse receives more consideration, travels long distances, but is never burdened so heavily. A donkey can carry several hundred pounds almost any distance, but is generally used for short journeys. Woman is preferred for the carrying of loads of 50 to 100 pounds of firewood, fodder, charcoal, farm produce, etc., from the country to the towns, her journey varying in length from 2 to 15 miles each way. Man is used principally as a courier for the carrying of messages over long distances, although in the cities there are many Soudanese or low-caste Moors who, two to ten together, transport heavy objects, such as tombstones, building materials, etc.

Vehicles are practically unknown. Tangier alone of the Moroccan cities has a number of wheeled vehicles, perhaps a dozen, most of which are heavy carts imported by the foreign sanitary commission for use in keeping clean the streets. Owing to the absence of roads vehicles would be useless, but roads will come hand in hand with the railroads.

LONG CREDITS IN TRADE.

In consideration of the possibilities of American exporters finding in Morocco a field for their goods the factor of greatest importance is that of credits. Quality and price have their influence, but conditions are such that long credits overcome any small difference in the other two items. England and France now control the bulk of Moroccan trade, while Germany, through its long-credit system, is rapidly gaining ground. An idea of the credit system in vogue between Morocco and the nations to-day may be gained from the appended data:

Cottons.—Supplied almost entirely by England to the extent of about $2,000,000 a year, on the basis of current accounts—that is, accounts which are opened with a deposit by the purchaser, almost unlimited credit offered, and accounts balanced, as a rule, once a year.

Silk.—Raw silk comes from France, shipped cash against bill of lading. Manufactured silk is also French, ninety days' to four months' credit.

Other fabrics.—England, current accounts or four months' credit. Germany, six months' credit with additional six months at 6 per

cent. France, ninety days' credit or discount for cash against bill of lading.

Sugar.—France, discount for cash against bill of lading. Austria, sixty days' sight. Germany, sixty days' to four months' credit. Belgium, sixty days' to four months' credit.

Candles.—England has a complete monopoly of the immense trade. Current accounts or three months' credit.

Builders' hardware.—Ninety days' credit allowed by England, Belgium, France, and Germany.

Flour.—Italy supplies great quantities on credits of sixty to ninety days. France offers discount for cash against bill of lading.

Building material.—Bricks from Spain and France on basis of cash to ninety days. Roofing tiles from France with credit of ninety days. Iron beams, Belgium, with ninety days' to four months' credit. Plaster and cement, ninety days' credit from France, Belgium, and Spain.

China ware and glassware.—Three to four months' credit by Belgium, Austria, Italy, and France.

General hardware.—Cash to current accounts.

A summary, then, of the terms demanded by the various European nations in dealing with Morocco is as follows: England, medium credits or current accounts; Germany, long credits, drawing interest after maturity; France, cash against bill of lading, or short credits; Belgium, long credits; Austria, long credits; Italy, medium credits.

It may be explained that France, although offering less attractive terms than most countries, gains business through liberal cash discounts, but principally through its intimate political relations with the country.

FUTURE POSSIBILITIES.

It is probable that no other country has the field for future development which Morocco has, one reason being its present primitive state, which allows development in every imaginable direction, and another being its vast natural resources, which make such development profitable and possible. Once the real development of the country really begins, once the "open door" is established (civilization is now only in the anteroom), the wealth of the country will surprise America. Mines of lead, zinc, tin, antimony, silver, and gold will be opened. Extensive irrigation systems, through a tapping of the four large rivers and the sinking of artesian wells, will treble the area of land fit for agricultural purposes, and the introduction of modern farm machinery (there is said to be only one metal plow in Morocco) will treble the production per acre. Fruit farms will be operated on a scale equal to the vast farms of California, conditions for fruit raising being as good or better than those of the extreme western State. It has already been demonstrated that silk culture is especially adapted to becoming a cottage industry in Morocco, the quality thus produced being equal to the best Italian. Cotton has been raised here, and the best botanical authorities unite in praise of the natural conditions for such an industry. Railroads, supplanting mule and camel, would unite the country, making possible the sale along the coast of fruit and grain raised in the interior, a thing now almost unheard of. Building is now confined to the thin fringe along the coast, because of the impossibility of transporting building materials

inland. Fisheries would be conducted on a large scale, one at Tangier already having demonstrated its practicability. Manufactories, even, would soon be necessary to supply the demands of the people awakened.

And with all these things would come a vastly enhanced demand for foreign goods—why not American?

AUSTRALIA.

IMPORTS OF METAL GOODS FROM ENGLAND RAPIDLY INCREASING.

Consul-General John P. Bray, of Melbourne, reports that large increases have been made during the past two years in the Australian imports of metal goods and machinery from England, the data being as follows:

The total value of metal goods and hardware (not including machinery) under twenty-nine principal headings, imported from England, rose from $13,047,786 in 1905 to $17,083,545 in 1906 and $22,769,141 in 1907. The increase in two years was thus nearly $10,000,000, or nearly 75 per cent. Among the principal lines are iron bars, rods, angles, etc., which amounted to $1,330,821 in 1907 against $951,721 in 1906; rails, $2,443,576 against $806,441; galvanized iron, $5,351,450 against $4,201,107; tubes, pipes, and fittings, $1,651,129 against $1,333,156; steel bars, angles, etc., $955,064 against $649,384, and copper goods, $1,191,533 against $629,101. Wire manufactures rose from $1,363,198 in 1905 to $2,204,465 in 1907. The following are the quantities of some of the leading metal goods imported from England during 1907:

Articles.	Tons.	Articles.	Tons.
Galvanized iron	68,152	Tubes and pipes and fittings, cast	4,333
Tin plates	14,639	Nails, screws, and rivets	3,240
Pig iron	30,863	Bolts and nuts	3,970
Iron bars, angles, etc.	34,204	Bedsteads	1,734
Rails	73,688	Steel bars, angles, etc	18,009
Wire	4,667	Copper manufactures	2,156
Wire manufactures	20,193	Hardware	4,181
Iron plates	18,358	Cutlery, value	$657,205
Tubes and pipes and fittings, wrought	19,009		

Machinery imports from England in 1907 show increases under every heading as compared with the previous year. The aggregate value of machinery rose from $3,341,732 in 1905 to $5,547,207 in 1906 and $6,077,455 in 1907, the value last year being nearly double of that of two years previous. The kinds and values of the machinery imported from England during 1907 were as follows:

Articles.	Value.	Articles.	Value.
Steam engines:		Not steam or electrical—Continued.	
Locomotive	$252,386	Mining	$354,763
Agricultural	198,441	Textile	149,479
Other	1,175,878	Other	3,662,622
Not steam or electrical:			
Agricultural	248,099	Total	6,077,455
Sewing machines	35,787		

EXTENSIVE SHIPMENTS OF RAW MATERIAL TO ENGLAND LAST YEAR.

The following gives a list of the principal exports from Australia to England during 1907:

Articles.	Quantity.	Articles.	Quantity.
Wheat.....cwt..	8,324,200	Tallow.....cwt..	627,704
Flour.....do....	131,400	Hides, wet.....do....	30,117
Frozen mutton and lamb.....do....	858,226	Sheepskins.....value..	$3,863,309
Frozen beef.....do....	126,030	Copper ore.....tons..	7,163
Frozen rabbits.....do....	538,366	Lead.....do....	50,150
Butter.....do....	587,923	Copper.....do....	16,809
Cheese.....do....	3,515	Tin.....do....	5,900
Wine.....galls..	787,853	Leather.....cwt..	72,681
Wool.....lbs..	321,470,000		

Among articles of food, increases are shown in wheat, frozen mutton, lamb and beef, butter and wine, while flour shows a decrease. Pastoral products, including wool, tallow, hides, and sheepskins, show increases. Among metals, copper and tin show increases, but lead a decrease, compared with 1906.

The aggregate value of the articles in the foregoing list, which is not exhaustive, was $142,958,693 for 1907, against $119,555,878 for 1906, and $111,676,695 for 1905. Out of the total, wool amounted to $70,990,836 last year, against $56,036,447 for 1906.

COMPARATIVE REVIEW.

PER CAPITA COMPARISON OF FOREIGN TRADE OF LEADING COUNTRIES.

The President of the Board of Trade of the United Kingdom has made the following statement to the British Parliament of the foreign trade of the United Kingdom, the United States, France, and Germany in 1907, and the amount of foreign trade per capita of population (£=$4.86; shilling = 24 cents; penny = 2 cents):

	United Kingdom.	United States.	France.	Germany.
Net imports	£553,932,000	£296,519,000	£241,906,000	£422,706,000
Exports	426,205,000	394,859,000	221,681,000	337,722,000
Total	980,137,000	691,378,000	463,587,000	760,428,000
	Number.	*Number.*	*Number.*	*Number.*
Estimated population middle of 1907	44,100,000	85,817,000	39,275,000	62,156,000
Foreign trade per capita:	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Net imports	12 11 3	3 9 1	6 3 2	6 16 0
Exports	9 13 3	4 12 0	5 12 11	5 8 8
Total	22 4 6	8 1 1	11 16 1	12 4 8

The imports for home consumption are calculated, in the case of the United Kingdom and United States, by deducting the value of the reexports from the gross value of the imports in 1907.

The values of imports and exports stated in the German and French official accounts are for the most part computed on the basis of the ascertained average prices of 1906.

TRADE EXTENSION.

CONSULAR COMMERCIAL WORK.

PANAMA.

THE FILING OF AMERICAN CATALOGUES AND PRICE LISTS AT COLON.

Consul James C. Kellogg writes that, in order to assist in promoting trade at the port of Colon with the United States, he has carried out the following plans:

As far as commerce can be aided through catalogues and price lists, which are, at best, poor substitutes for intelligent and up-to-date traveling salesmen, this office has fitted up a part of the record and file room, the latter measuring 12 by 12 feet, with divided shelves and a four-drawer file cabinet. At the present time there are indexed according to subject and kept on file 25 trade journals, 20 trade indexes, and numerous catalogues and price lists of American goods.

File room, American Consulate, Colon.

The local merchants and importers have been invited through the columns of the press and by personal invitation to visit the file room and examine the journals and catalogues, and to consult with me on subjects relating to American goods which might be of interest to them. The addition and improvement in the file room has found favor with the Colon merchants, which is evidenced by their frequent calls at the office to examine the files.

The new arrangement of the record and file room is shown in the accompanying photograph, which also shows some of the representative importers of Colon examining American catalogues and price lists.

SWEDEN.

SUGGESTIONS TO SAFEGUARD AMERICANS IN TRADE INQUIRIES.

The following suggestions concerning the best means of safeguarding Americans seeking foreign trade through consular inquiry, and from foreign inquirers seeking American trade through the same channel, a system which has grown to unexpected proportions, is furnished by Consul W. Henry Robertson, of Gothenburg, Sweden:

American manufacturers or exporters writing to a consulate regarding the introduction of their goods abroad, and asking that their letters be referred to some one who might act as their foreign agent, or who might purchase from them, should invariably give their exact prices, terms, and conditions as far as possible, and should furnish at the same time banking or commercial references. Otherwise, in this consular district at least, it is practically impossible to induce anyone to take the slightest interest in such inquiries. Many important trade opportunities are lost through inattention by our exporters to these all-important details. Foreign dealers will not take the trouble to enter into correspondence with American firms without at least prima facie evidence that good results are likely to ensue.

Where American exporters write to a consulate, looking to an increased sale of their articles abroad, they should invariably advise it as to any agents they may already have in the consular district, or the country itself, so that embarrassing situations may be avoided and the consulate may be assured, before seeking additional agents for such firms, that the ordinary ethics and usages of honorable dealing are not being violated. This consulate, in one instance at least, was allowed to suffer the embarrassment of submitting such a letter of inquiry of an American house to the firm's own agents here, who had happened just before that to have made a very fine sale for it.

FOREIGN IMPORTERS SEEKING INFORMATION THROUGH AMERICAN CONSULS.

Where foreign importers apply to a consulate for the names of American exporters, or where such inquiries are referred by the consulate to the Department of Commerce and Labor, it is thought that it would frequently save not only much useless correspondence, but possibly some unfavorable business connections for American exporters, were such inquirers invariably required by the consulate to first furnish such banking or commercial references as would indicate on the surface that connections with them were justifiable and likely to be profitable to our trade. In other words, without carrying with it any undue responsibility upon the consulate in the matter, the very fact that the latter had furnished a foreign inquirer with the names of American exporters in his line, or that it had referred his request for the same to the Department of Commerce and Labor, should of itself justify a favorable assumption at home with regard to such inquirer as a foreign purchaser or agent. Moreover, such *foreign inquirer* should understand that his overtures would be given

a much more prompt and satisfactory attention in the United States if as clear a statement as possible of his terms and conditions, and of his ideas of the general possibilities of the foreign market for the goods in question, would accompany his inquiry.

It is assumed that most of our consulates, without taking upon themselves any responsibility for connections that may result, extend a general standing invitation, indirectly through the local press or otherwise, to possible importers of American products within their several districts to file with them their names and the articles in which they are specially interested. It would seem still better if the banking and commercial references of these parties and their general terms and conditions could be filed at the same time, with permission for their full use properly by the consulate. In this way we could not only put our exporters in touch with all the reputable houses in our several districts, but it could be seen that so far as the consulate was concerned they got in touch with no others and were spared no end of useless correspondence and investigation.

It would also be of great advantage in several ways if foreign importers or agents could be induced in all cases to let the consulate know exactly the names of American firms from whom they import, or whom they represent, and the articles that they receive. In all such instances the exporter, the importer, and the consulate can only have a common interest, and this can always be best advanced where there is a mutual understanding of the situation, mutual confidence, and a thorough cooperation in the matter. For example, in the case of newspaper or other attacks upon American products in a foreign country, far better methods for combating and for measuring the effects of these can be adopted through united than through individual effort.

A CENTRAL BUREAU OF COMMERCIAL INFORMATION.

A very serious and practically needless loss of valuable time would be saved our consulates and American trade interests abroad would be far better subserved in every direction, were American exporters repeatedly encouraged, through the medium of the Daily Consular and Trade Reports, to look more and more to the Department of Commerce and Labor, rather than directly to our consulates, for just the advice and information needed for the successful introduction of their goods abroad. In fact, if our consulates are to properly perform the time-consuming duties now expected of them, along with their other work of keeping the Government promptly and accurately posted on all commercial facts and figures of their respective districts and on the opportunities therein for American trade, not only exporters but the American public as a whole must be brought to increasingly regard the Department of Commerce and Labor and its Bureau of Manufactures as a central bureau of information on all commercial matters, foreign and domestic, and our consulates as contributing, but not distributing, sources of such information.

If consular officers are to spend the time necessary for properly procuring the commercial information now exacted of them, they can not possibly have enough left for disseminating this information in answer to the constantly increasing number of repeated inquiries on the same subjects. It is, therefore, strongly suggested that as the Department of Commerce and Labor is put more and more by consular *officers in possession* of the commercial data and conditions

of their various districts and countries it should constantly make use of the most available means at its disposal to educate our people, whether private parties, firms, corporations, State officials, or others, to allow all their requests for information on commercial or any other subjects on which we are supposed to keep our Government posted to reach us through the Department of Commerce and Labor, and not directly.

UNNECESSARY LABOR TO WHICH CONSULS ARE SUBJECTED.

Whatever criticisms may be made against the consular service of the United States as a whole, I have never heard it charged with a lack of industry or alertness, and the plea herein made is not at all one for lessening work, but against wasted or misdirected effort. It is merely intended that with the same amount of energy in more practical directions much more useful results shall be achieved. As it is now, a formidable and constantly increasing mass of inquiries is received in practically each United States mail, many of them very comprehensive and on subjects on which each consulate has already repeatedly reported to Washington and to various individual Americans interested in the same lines. These inquiries would never have been addressed to the consulates at all, or certainly not in the form in which many of them are made, if the writers themselves had only thought of first consulting the proper Department of the Government at Washington; and if they are to increase as rapidly in the future as they have done in the past, it will be impossible for even a consulate of the grade of Gothenburg to take care of them.

A single instance may be given. My predecessor reported last June upon a miniature telephone, or microphone, invented by a Swede, which was expected to be of great convenience to employees at telephone stations, and also of service to persons with defective hearing. This report gave all the information on the subject available at the time, and carefully stated the name and address of the inventor [which was filed for public reference at the Bureau of Manufactures], so that those interested might apply to him for further details. Instead of thus disposing of the matter, so far as the consulate itself was concerned, it has done just the contrary. The press of the United States evidently made some incomplete reference to the report that was widely copied throughout the world, for the consulate has already been obliged to answer some 47 letters of inquiry on the subject from all parts of the United States, Great Britain, Cuba, Australia, Canada, etc., and they are still coming. It will readily be understood that, with the limited clerical assistance at consulates and with no funds for preparing printed replies to such inquiries, such an experience, which is not at all an uncommon one, almost deters a consul from making such reports at all, since the alert, energetic officer who makes the most reports, and consequently has the least time to spare for needlessly repeating them, is the one who gets the most inquiries. It would seem only fair, then, if consuls are to carefully collect the information, that the Department of Commerce and Labor, with its special equipment for this very purpose, should disseminate it.

ADVANTAGES OF SYSTEMATIC WORK.

In the case of trade inquiries, a requirement that these should come *through the* Department of Commerce and Labor would not only

spare consulates and the Departments of State and of Commerce and Labor the present system of circumlocution, but would have other distinct advantages: (1) The Department of Commerce and Labor could best judge whether the character of the inquirer and of the inquiry justified such a reply as consular officers now always feel obliged to make; (2) all the information desired may already be on the files of that Department, which could almost always give it in more complete and accurate form for a whole country than could a single consular district; (3) in many cases where a consul now has to give long lists of importers, manufacturers, etc., and to make comprehensive reports on matters that can only come to naught, the Department of Commerce and Labor could briefly point out in reply that the difficulties in the way of introducing this or that article into a certain foreign market were simply insuperable, and that would be an end of it for all concerned; (4) the loss of time to the writer of having to await an answer from abroad, instead of from Washington, would be obviated.

Nothing in this report is intended to mean that a consulate should not at all times be called upon wherever any American desires information from its district which the Government decides it is proper to thus secure, and which has not already been furnished to the proper Department at Washington. Such inquiries could be readily referred to consulates by the Department of Commerce and Labor.

MARKETING AMERICAN GOODS.

CHINA.

SUGGESTIONS ON METHODS FOR OBTAINING A FOOTHOLD.

Consul Wilbur T. Gracey, of Tsingtau, transmits the following report relative to the methods to be pursued by American business men in introducing their goods to the Chinese:

This office, and probably most of the other consular offices in China, is continually receiving many catalogues from the United States, which can in themselves never be sufficiently effective to increase the sales of American goods. Several reasons make this a fact:

First, because most prices quoted by American business men are extremely high, on which such discounts are quoted as "80—20—10—10 and 10 per cent." This is not clear to business firms in the East. These devious quotations must be done away with before foreign business can be strengthened. European firms quote actual values, sometimes in the currency of the nation, but more often, if it is possible, in the currency of the Chinese port at which they expect to sell.

Second, it is impossible for the Chinese purchaser, whom the manufacturer wishes to reach, to read the English catalogue. Translation of such catalogues into Chinese would be almost as useless, as the Chinese do not understand the method of purchasing by catalogue. Mail orders are practically unknown in the Orient.

Third, American catalogues sent to consulates will not reach intending purchasers. The European firms out here have enormous quantities of catalogues of goods manufactured in their own countries, and should they have inquiries from interested Chinese they would naturally endeavor to sell goods manufactured in their home country,

with which they are probably fully familiar, rather than to endeavor to dispose of articles which they know nothing about, and which may, on arrival, not be up to description. Should one of these European firms desire to purchase American goods, it would be most improbable that he would apply to the consulate for catalogues, as usually he would not find such information as he needed, or if he did it would be so old or so insufficient as to be practically useless.

TRAVELERS BETTER THAN CATALOGUES.

Catalogues that are sent to this consulate are carefully filed, indexed, and held available for all inquirers, but applications for them are very few. If manufacturers in America would use money wasted in sending catalogues to secure some traveling agent to inspect the territory for them, and inquire as to the methods pursued by other firms in that particular district, their increase of trade would be much more rapid than under the present system.

American manufacturers desiring to dispose of their products in China can only do so by conforming to the wants of their customers, which can only be discovered by some one familiar with the particular product which is to be sold; by carefully canvassing the market, which must be done by expert agents, armed with samples, and if possible with a supply of goods in one of the large central trade centers of the Orient.

A knowledge of the Chinese language is not a necessity to such a traveling agent, though it would, of course, be of value to him. A knowledge of the customs of China, the methods of trade, the mannerisms of the people, etc., however, would be an invaluable asset.

One of the most important points is to have goods available in China, so that delivery can be made within a few days, or, when that is impossible, to be able to give credits of from one to several months.

GRANTING OF CREDITS—SYSTEMATIC INVESTIGATION.

One of the great drawbacks to the introduction of American goods, states an American business man, is that the manufacturer expects to ship with payment in advance or upon delivery to the vessel. Against this British firms give credits, even to comparatively unknown firms, of from two to six months or even more, while the German firms extend such lengthy credits that it amounts practically to sale on commission. Reform in the American credit system will do much to increase trade.

To increase trade with the Orient it is first necessary to have a thorough systematic investigation made by persons familiar with the class of goods it is desired to sell, and then to have agents, fully supplied with samples, to follow in the footsteps of the investigating commissioner.

The members of the American consular service are using their best endeavors in an effort to point out possible imports, but it is impossible for them to report fully on special lines of goods, partly because they have not sufficient time for this purpose, but principally owing to their lack of special knowledge regarding separate kinds of goods.

MERCANTILE COOPERATION.

Commercial societies could easily arrange to support an investigator in this field, whose services might be invaluable. The hardware dealers, household furnishing manufacturers, furniture factories,

wall-paper makers, reenforced-concrete builders, electric-lighting plants, etc., might combine and support an investigator who could do valuable service by thoroughly covering the countries of the Far East, and discussing the possibility of the introduction of goods of American manufacturers which might be specially adaptable to the differing climates found here.

Concrete construction might be suitable to one part of China, while iron with an inside wooden casing might be more satisfactory in another part of the Empire. A door and window manufacturer might find an opportunity to introduce his goods to a considerable extent in Shanghai, Tientsin, or one of the larger ports, for use by the European residents, but he probably could not introduce doors or windows of the size used in the United States. A consul who is unfamiliar with carpentering or house construction would be unable to give him reliable information as to the possibilities for the introduction of his class of goods, while a special agent familiar with this business might show the manufacturer an excellent opportunity or convince the houses handling this class of goods in the Far East of the desirability of securing ready-made doors or other articles, and also give the manufacturer valuable advice as to the size, quality, and probable price that could be charged for his goods.

Such information as this can only be given by persons familiar with the trade. It is reasonable to expect that an intelligent investigator could be secured who would be familiar with all the lines that might relate to house building, and without conflict might arrange to act as agent for firms dealing in many kinds of goods adaptable to such construction work. Such an investigator might be able to arrange for representatives for his clients and with a clear knowledge of the goods could undoubtedly introduce many classes of manufactures in China which are not now used.

TRADE SPECIALISTS—TRANSPORTATION.

A commercial bureau of cotton-goods dealers, established in China, with a traveling agent continually investigating conditions and possibilities of competition with the merchants of other countries; another commercial agent investigating the possibility of increasing the trade in flour and other cereals; a third agent considering the introduction of stoves, or safes, or glassware, or enameled goods, or any other line, could discover opportunities which it is impossible for the manufacturer to find by correspondence, by catalogue, or by individual effort.

American business men must be continually investigating the Eastern markets, and when a possible trade is discovered they must cater to its needs, paying special attention to the question of credits and to that of packing, remembering that the transportation facilities in the interior of China are still primitive. Competing lines of goods will often find a better sale because they are packed in some special way that makes their transportation by mule, on carrying poles slung over the shoulders of Chinese coolies, by wheelbarrow, by sampan, by mule litter, by Pekinese cart, or some one other of the peculiar methods of transport in China, easier, and therefore cheaper.

The sale of goods intended for the interior of China is largely effected by these means of transportation, and this is one of the points

that must be investigated by the special agent, the ultimate destination being one of the great points which is usually considered by the European manufacturer with whom the American must come into competition.

CYPRUS.

AMERICAN EXPORTERS LOSING OPPORTUNITIES IN THE ISLAND.

In confirmation of his previous suggestions on the commerce of the island of Cyprus, Consul-General G. Bie Ravndal, of Beirut, submits a letter from a Cyprus firm which has branch houses in several cities of Asiatic Turkey. Mr. Ravndal is firmly convinced that American commercial travelers, specially educated and trained for work in foreign countries, are an essential requisite to the promotion of the trade of the United States in that part of the world. The letter, in condensed form, reads:

Replying to your esteemed letter regarding the best means of extending the commerce of the United States in Cyprus, we beg to outline the means which might contribute effectively to the extension of trade relations between the United States and our island.

Our country ought to be visited by travelers of American firms. We attribute to such visits a very great importance. A merchant would hesitate to change his habits, even if he were sure of getting one of his articles at a lower price and of superior quality, in view of the uncertainty as to the execution of his order, the great distances and the unavoidable delays in the delivery of the goods, and sometimes many other possible events and difficulties as to the quality, the conformity of the execution, etc. A traveler could soon clear up all the prospective client's doubts and hesitancy. A local representative of a foreign manufacturer does not have equal facilities and could not give advice as well as a commercial traveler. As an example, the following may be given: We represent an American steel and wire company. This concern, among its different articles, is offering to us its water and gas tubes at lower prices than the English factories of Birmingham are offering the same kinds of tubes. We are sure that the quality of the American firm's tubes, if it is not superior, is at least equal to the English ones. Notwithstanding all these advantages, it has been impossible for us to obtain a single order for the American goods. Our clients claim that the merchandise would take a very long time—five or six months—to arrive in Cyprus, while they receive their merchandise from Birmingham in two or three months.

The same thing happens with the cabots (cotton domestics), which are imported in great quantities from Manchester and from Italy, in spite of the American cabots being better in quality and cheaper in price. This article is subject to frequent fluctuations, and the import merchants do not desire to submit themselves to these conditions during the six months of the execution and the delivery of their orders.

THREE TRADE OBSTACLES.

Consequently it is necessary that our country be visited by representatives of the factories and firms of the United States desiring

trade. The traveler is always indispensable to introduce an article. There is also the necessity for establishing at least monthly communications between the United States and the Orient. The third point relates to the terms of payment. The American firms require not only the payment to be cash, but they do not dispatch the goods without the remittance of their value in the port of shipment. Some firms do not even accept confirmed credits opened in their favor with banks of the first class at London, but require the credits to be opened at New York. All this represents more than 4 per cent of expenses, viz, 1½ to 2 per cent for the opening of the credit at New York and 2 per cent loss of interest, considering that the goods are thus paid for two and sometimes three months before their delivery or arrival in Cyprus.

The three points, viz, (1) visit to Cyprus by the traveler, (2) rapidity of transports by the establishment of monthly communications between the United States and the Orient, and (3) allowance of facilities and less severe terms in the payment, are the three capital questions which ought to be taken up by a commercial mission specially intrusted to study them at the purchasing places.

We speak with confidence on this question, as we are almost the sole import merchants and agents of American products in this country, our articles of import consisting of oleo oil, in good quantity; leathers, such as box calf, etc.; coaches, "pointes de Paris," so-called, etc.

The establishment of more rapid communication between the United States and the Orient would result also in the extension of the exportation of our products to the United States. Some articles are not valuable enough to support the cost of two to three transports, and we have not been able to ship such articles as umber earth and carob beans, that are asked for by American importers, for lack of communication between our port and the United States.

American products are not well known by the larger part of the import merchants. This is one of the principal reasons showing the necessity for visits to our country by travelers of the American factories.

HONDURAS.

SALES SUGGESTIONS TO EXPORTERS OF UNITED STATES.

A report from Consul Drew Linard, at Ceiba, states that the increase in trade between the United States and Caribbean ports is developing rapidly and the American population is becoming more in evidence each succeeding year. The consul gives the following advice on how to advance trade in Honduras and other Central American republics:

The natives of these countries are quick to adopt the habits, customs, and dress of the modern American, which results in a growing demand for everything that is American. Germany is sending out commercial men to these ports to compete with the Americans and England will doubtless soon follow the lead. To hold and permanently control the Central American trade to American manufacturers is not a difficult problem, and a few pertinent suggestions therefor might well be observed among the exporters who are about to enter this field of foreign commerce:

The exporter should not expect the consul to be his personal representative, to exploit his samples or to "push" his particular brand; yet he may be sure that equal prominence will be given his product with other manufacturers in his line.

In writing to the native merchants do not use English, remembering that in Central America the Spanish language is exclusively used in trade.

To depend upon printed matter to do business is poor policy and does not carry the conviction of traveling representatives, who should speak Spanish.

PRACTICAL POINTS.

When bidding for business by mail care in the prepayment of postal charges should be given especial attention; failure in this little courtesy is not conducive to the merchants' good humor, and penalty postage is an irritating expense.

The exporter should acquaint himself with the articles appropriate to this climate and forego his endeavor to introduce heating apparatus, steam radiators, furs, and overcoats in these latitudes. There is no market in the Tropics for such articles. Let representatives study the requirements of the people and then cater to their tastes. Argument will not overcome prejudice among them; they will pay the price for what they want and will not accept as a gift that which they do not want.

Do not unload old or questionable stock on this market and expect a continuance of patronage. An offense of this kind seriously injures American trade in many branches and creates an unfavorable impression.

To merchants of good financial standing be liberal in giving extended credit. This method is advantageous to Germany and England and is an effective and trade-winning virtue; owing to fluctuation and depreciation in the silver market, the shrewd merchant often desires to defer payments until a rise in exchange occurs, and long credits give him this opportunity to save considerable money.

GOOD PACKING NECESSARY.

So much has been written by American consuls from every corner of the globe relative to the indifferent and careless manner of packing goods for foreign transshipment that I will only add to this subject the reply of an American manufacturer to my question: "Why is it that the packing of the American exporter, though using improved mechanical devices for packing, combined with intelligent and skilled packers, does not compare favorably with European shippers?" The reply was as follows: "The American manufacturer has to pay from $15 to $25 a week to his head packer, while in Europe labor is much cheaper, so the merchants in Central America can not expect us to spend as much money and attention on packing as our European competitors."

Such lack of foresight is poor argument to hold trade and will not influence the importer, who wants his merchandise delivered intact and in good order. Secure and light-weight packing of goods and extended credits will obtain and retain trade, and the merchants of these countries will deal with the exporter who does business in this way, regardless of geography or elaborate advertising.

FRANCE.

CONGRESS OF INTERNATIONAL LEAGUE OF COMMERCIAL TRAVELERS.

Consul Felix S. S. Johnson, writing from Bergen, Norway, says that an International League of Commercial Travelers' Associations is in course of formation, and men of the road in many lands are interesting themselves in the movement. The consul continues:

In the month of June there will be held in Paris a great international congress at which the project will be fully launched, and in the meantime steps are being taken to enlist the support of commercial travelers in the chief countries of the world.

During the past two years the London Board of Trade has helped to clear the way for an international league of this kind, because the English Government, moved by their department, had entered into agreement with the Belgian, Swiss, and French governments, whereby facilities had been mutually created for the clearance of commercial travelers' samples through the customs. Negotiations are in progress with other countries and it is hoped by the time the league is in full swing the English Government will be in a position to announce agreements of a similar character over the whole of Europe.

It would be hard to overestimate the importance of the proposed league. Trade is international and, in spite of every restriction that could be devised by the wit of man, it must always remain international. The international movement has a great future if it will result in a better organization of trade. American business men must learn to speak in other languages, to quote in other languages, and to issue price-lists in other languages.

Foreign nations will not do business with the United States only in English, and the lack of knowledge of other languages has been a drawback to American trade. The formation of the league would add prestige to the calling of commercial travelers of all nationalities, who have similar interests which need never clash with one another, and which never obtain proper recognition unless the representatives of commerce unite and present a solid front to the world.

ADVANTAGES OF AN ORGANIZATION.

In speaking of the formation of the league, a speaker remarked: "Most quarrels, whether between individuals or between nations, are due to misunderstandings, and when people get to know each other well these misunderstandings disappear. With them disappear the quarrels, the difficulties, and the wars, which result from the ignorance of one set of people as to what is passing in the minds of others. A league of this kind would be a missionary of peace among the nations." He was convinced that the vast majority of people of all countries wish to live at peace with each other. But there are found in every country those who believe that men in another country are simply waiting and watching for an opportunity to declare war against them. When they go to the other country they find the same suspicion, the same jealousy, and the same feeling against themselves. In the course of their business commercial travelers could make it clear that all they wanted was to be able to traffic with other people and show that so far from having malignant designs against foreign countries all they desired was to live at peace and amity with their neighbors.

It is to be hoped that delegates from the commercial travelers' association in the United States will participate in the International League of Commercial Travelers, for not only will it be the means of their deriving the benefits already accorded to British commercial travelers in Europe, but new ideas, suggestions, methods, ways, and means will be brought up at this Paris conference of advancing trade and creating new markets on the Continent which will be of untold value to manufacturers and exporters of the United States.

ITALY.

PROPOSED PERMANENT EXHIBITION OF AMERICAN PRODUCTS IN GENOA.

Consul David R. Birch furnishes the following information relative to a proposed scheme for the enlargement of American trade in Italy through a permanent exhibition of goods in Genoa:

The project of a permanent exhibition of American goods in Genoa is proposed by a well-known ship broker and forwarding agent of the city, who is prepared to take up the management of the enterprise after making a conservative study of the local situation. He is closely in touch with the buyers of all classes of manufactured articles and has frequently been interrogated concerning American wares of various kinds.

It is proposed that a store with large floor space be rented, and at present the most available site is considered to be the building in course of construction next to the new Bourse. In this building, the most central location in Genoa, there is available for rental a floor space in one large room of 1,200 square meters (12,912 square feet). The rental could be met and all other expenses defrayed through the payment by each exhibitor of approximately $20 a year for every square meter (10.76 square feet) occupied.

The promoter recognizes that unless a large number of American exporters join with him at the outset, the hiring of floor space in such a place is out of the question for the first year, because of the high rental. While it is believed that the best results can be had through the acquisition of a centrally located exhibition hall, the promoter is prepared to begin in a more modest way and work up in the event of the scheme proving a success.

EXPENSE SMALL AS POSSIBLE.

The expenses will be as small as is possible to make them, and will consist in merely the rental and fitting out of the store. There will be no outlay for salaries, as it is the purpose of the promoter to personally manage the place and work for the sale of the goods upon a commission basis.

The expenses of the American exhibitors will consist of a pro rata payment of the rental in accordance with the space occupied by their exhibits. These will always remain the property of the American houses and can be returned to the United States at any time. The charge for transportation from the United States to Genoa and the Italian customs duty upon the article intended for exhibition purposes will be for the account of the American house.

This consulate believes the project to be in good hands and that the *inauguration* of such a scheme will do much to promote the expan*sion of American* trade in Italy. As to the advantage of Genoa over

other Italian cities in this connection, it is pointed out that Genoa is the principal port for American trade, not only for Italy, but for the entire Mediterranean. The value of American goods landed at Genoa last year exceeded $40,000,000.

Hundreds of letters, frequently accompanied by catalogues, are received at this consulate from American manufacturers seeking a market for their surplus stock, but to date the results of negotiations between American houses and prospective buyers here, whose names have been furnished by this office have been far from satisfactory, for the reason that the Italian buyer prefers to see the articles before purchase.

STRAITS SETTLEMENTS.

HOW AMERICAN MANUFACTURERS CAN WIN THEIR SHARE OF TRADE.

In reporting on the failure of a few manufacturers to secure expected trade in the Orient, and the causes of such failure, Consul-General Thornwell Haynes reports as follows concerning Singapore as an entrepôt from which to exploit many eastern markets:

The cause for failures in the Orient, in the special cases referred to, was in allowing unknown agents to handle their goods, or rather not to handle them. Many an agent if he can secure a larger commission by selling an inferior foreign typewriter, for instance, than by selling a standard American make, will do so, and for the same reason he will give the preference to Australian flour, German beers, English mining machinery, etc.

A large cooperative house in Singapore, keeping in stock all lines of American goods, and from which commission-paid agents could exploit American lines, would be advantageous. Financial customs, banking, credit systems, the tastes, necessities, and markets would be learned, orders filled immediately; tariff and freight on American goods entering in bulk lessened; methods of English, German, and other rivals studied; in fact, so many advantages that enough time could not be taken in enumerating them. Certainly the proportionate share of expense of thirty or forty manufacturers would be insignificant compared to the gain. The only objection would seem to be that no two manufacturers of like goods would enter the concern, because of competition. Even if this could not be overcome, there are more than enough manufacturers of totally different lines of American goods, from a paper clip to locomotives, to make such an undertaking successful. By this means American farm implements, mining machinery, tools, etc., would have profitable outlet.

CEYLON.

AMERICAN TRADE LOST THROUGH REFUSAL TO GRANT CREDIT.

Consul E. A. Creevey furnishes copies of correspondence between an American manufacturer of gas, gasoline, and oil engines and a leading firm in Colombo desirous of handling the same, which proceeded satisfactorily until it came to the question of credit.

The firm suggested that a certain class of engine, to cost $750, be shipped to them with the privilege of returning the same at the end of three months, should it not prove satisfactory, the Colombo firm to pay all shipping expenses to and from the factory. To this

the manufacturer replied that he could ship no engines out of the country without receiving pay therefor on delivery of bill of lading at New York or San Francisco. The Colombo firm replied that, under the circumstances, it was of no use to continue the correspondence, concluding with the following paragraph:

British, Belgium, and German firms are more generous in their conditions and terms of payment to accredited firms in the colonies to introduce new goods, and until American houses take a leaf out of their book you will have to be satisfied with your home trade.

MEXICO.

PROPOSED TOUR OF THE UNITED STATES BY BUSINESS MEN.

A Mexican journal says that arrangements are being completed by the general passenger agent for the National Lines of Mexico to take a select party of representative business men of Mexico City to the United States for a tour of the leading commercial centers during September of the present year, according to the secretary of the Chicago Association of Commerce, who has been in Mexico for the purpose of studying the commercial relations between Mexico and the United States.

EXPORT SALES AGENCIES.

HOW A GREAT EUROPEAN ORGANIZATION WAS DEVELOPED.

Consul Edward J. Norton, of Asuncion, Paraguay, furnishes the following report relative to sales agencies as a means of working up an export trade:

This consulate recently received a letter from a newly established export sales agency, in whose hands a number of American manufacturers of noncompeting products had placed the building up of their foreign trade, and some months earlier letters and circulars were received from another such organization devoted solely to the development of business in Mexico and Central and South America.

The organizers of these agencies, according to their letters, seem to possess a clear understanding of export trade, based on practical experience. One company in particular has a manager who spent some years in Mexico as a salesman and who is assisted in his work by a technical staff and a force of expert translators.

A sketch of the organization and methods of a powerful and successful European export sales organization may be found interesting. The founder of the present company commenced business as a commission agent in a Central American republic about twenty years ago. Successful in a small way, he studied conditions thoroughly and became convinced that a central sales organization, with resident agents in different countries, could build up a large business.

He went to Europe and secured the lines of a number of manufacturers whose products, while noncompetitive, were more or less related. Operated at first on a small scale, the organization soon developed and extended its field. New salesmen were sent out, and today the company, with its central offices in France, has a resident agent in every republic from Mexico to Argentina, and the amount of business handled is very large.

About thirty-five manufacturers, scattered throughout France, *Italy, Spain,* Ireland, Scotland, England, and Holland, are repre-

sented. The products handled are Spanish, French, and Italian wines, liqueurs, and cordials; beers, cognacs, champagnes, gins, and whiskies; canned fish and vegetables, and a line of French biscuits and preserves, complete the list.

The operations of this agency from its beginning have been confined to the Latin-American Republics. The home office, with its thorough knowledge of conditions and business affairs in Spanish-America, directs the agent, helps him through difficulties, and sees that no opportunities are neglected.

WORK OF THE AGENT.

The agent speaks the language of the country to which he is appointed—Spanish, French, or Portuguese, as the case may be. Before leaving for his post he is thoroughly instructed in the products he is to sell. He visits each factory and studies the goods; notes the method of packing and assembling orders; the system of each separate concern in its relation to the central agency, etc.

Agents are bonded and are forbidden to take on any side lines. Salaries range from $1,000 to $1,500 per year. In addition to this, commissions on sales, running from 1 to 5 per cent, are paid. Actual office expenses are allowed, but no provision is made for traveling expense, this being offset by the allowance of increased commissions on goods sold while traveling over each district.

Each agent forwards a detailed market report every week, covering conditions in his territory and giving full information regarding each client or prospective customer, the movements of competition, etc. This information is sent to the central office and separated and sorted. A compilation of the agent's report eventually reaches each manufacturer, but touching only upon the topics relating to his particular product.

Small orders are shipped by the manufacturer to the central agency where they are lumped with other goods to save expense, being shipped in one consignment under one consular invoice, insurance policy, etc., and the actual expenses are charged proportionately on the buyers' invoices. For goods so dispatched, the central agency makes the drafts and handles the collection of the invoices. Large shipments are forwarded direct from the manufacturer to the buyer, and the manufacturer draws up the documents and collects his own account. Orders are forwarded in quadruplicate. The original goes to the manufacturer, a duplicate to the central agency, while the buyer is given a copy and the agent retains the other.

CREDITS AND DISCOUNTS.

In the Argentine Republic, Uruguay, and Paraguay, the usual credit terms to responsible merchants are six months from date of shipment. The goods are generally four months in transit. Bolivian merchants, on account of their geographical situation, are allowed nine months from date of shipment. All shipments are made against documents, the purchaser accepting the draft and also paying the cost of collection. In presenting a draft for acceptance the customs of the country are invariably respected. In the Argentine Republic, Uruguay, and Paraguay, the buyer inspects the shipment previous to accepting the draft. Discounts of from 2½ to 3 per cent are allowed for cash on arrival of goods, and ½ per cent per month

is given for advance payments. Interest at the rate of 5 per cent per year is charged on overdue accounts.

In determining the financial responsibility of buyers the agents draw their information from the banks, and through commercial circles in general. Losses through bad debts are proportioned among the agent, the central agency, and the manufacturer, at about 10, 40, and 50 per cent, respectively.

A catalogue issued by the central agency is a handsomely bound volume containing the catalogues of all the manufacturers represented. It is printed in French, Spanish, and Portuguese, according to the country in which it is to be circulated. The nature and advantages of the central selling agency plan are explained in an interesting manner; terms and prices are given. Discounts are not printed, however. The cost of newspaper advertising or special propaganda is borne by the manufacturer.

AMERICAN SALES AGENCIES.

As the writer understands the methods of the American export sales agencies, they are working in part or wholly through the mails. This is one of their weak points, and a method hardly more efficient in securing new business than the efforts previously put forth by the manufacturers whom they now represent. The agencies may translate catalogues and conduct a correspondence with a foreign customer in his own language, but even this will prove to be of little actual value. Tons of catalogues come annually to countries as small and isolated as Paraguay, and it is rather discouraging to note the indifference with which they are regarded. I have seen heaps of them lying in the corners of many offices, covered with dust, their wrappers still unbroken.

The man on the spot is the man who develops trade, and the export sales agencies, or the manufacturer who works out his own export problem, must have a representative, traveling or resident, before much headway will be made in the building up or extension of foreign business. This method is expensive, but it brings results.

In sending out representatives the territory nearest home should be canvassed first. There is plenty of it. Mexico is a good field, and a big one. The trade of Cuba, Jamaica, the Central American Republics, Panama, and Colombia shows an ever-increasing demand for American goods, and in some of these countries the American traveling salesman is rarely seen.

Export sales agencies must withstand the temptation of overloading themselves with clients. They should choose the field with which they are thoroughly familiar, and then stay in it. A selling organization, for example, giving its attention to South America, will find plenty to do, and by limiting its sphere of action may select the goods most adapted to that section.

It is not necessary to allow unreasonably long credits in South America. If American manufacturers would look at the credit question closely, from this end, noting the strict attention paid to business, the simple manner of living, the absence of extravagance, the relatively few business failures, and the vitality and progress of these countries, he would feel that the time had arrived for him to depart from his inflexible rule of cash and extend to responsible merchants *in South* America the same reasonable term of credit he allows to *his customers at* home.

MISTAKES BY SHIPPERS.

CUBA.

MANY EXPORTERS IN THE UNITED STATES FAIL TO OBSERVE REGULATIONS.

American shippers to Cuba continue experiencing difficulties at the island's custom-houses because they neglect to conform to the regulations and laws of administration. Consul-General James L. Rodgers has just concluded an investigation of a shipment of furniture by a Chicago firm, which complained when their goods were sold by the Habana authorities for accumulated charges. The consul-general's report, which follows, should cause exporters to Cuba to fully observe the customs regulations of that Republic:

The attention of American shippers to Cuba, and especially to those whose goods are consigned to Habana, has been called many times to the excessive charges brought about by failure to clear the goods promptly. A previous statement was as follows:

It should be remembered by shippers to Cuba that, owing to the lack of wharf space at Habana, the great port of entry, there is of necessity but limited time for the clearance of goods, and after this period, namely, seventy-two hours, high charges for transfer and storage commence, and these constituting a first lien on the shipment, oftentimes, in event of delays in clearance through defective papers, failure of consignee to receive, and other causes of related character, will not only absorb profits but also occasionally result in confiscation. These rates for transfer and storage are about to be increased by the Government. The schedule is not given at this time, but the assurance can be advanced that they are already sufficiently high to warn all exporters of the wisdom and economy of exercising the greatest care in their exportation documents and to be ready with a prompt remedy in the event of the customer failing to receive the goods.

This warning has been repeated several times, and in addition there has been given the storage charges, which are as follows: For the first five days, 5 cents per 100 kilos (kilo = 2.2 pounds) daily; after five days, at the rate of 10 cents per 100 kilos daily, until the consignment goes to the general warehouses, where the charges are $1.25 per 100 kilos for the first month, and 1 cent per kilo per month thereafter, the minimum amount charged for being 100 kilos. In addition, there is a cartage charge from the wharf to the warehouse of 25 cents per 100 kilos.

REASONS FOR THE CHARGES.

The explanation for these high charges lies simply in the fact that the wharfage space in Habana is so small that it is absolutely necessary to compel the removal of goods as speedily as possible, and to further enforce the rule the Treasury Department announced last summer the intention of increasing the charges. This, however, was not done, but the threat served its purpose.

There have been many instances of a character similar to this complaint, and in every case there has been absolutely no remedy, the Cuban government reserving to itself the right to make its own wharfage and storage charges and to sell at auction such unclaimed goods as remain. To warn shippers of the danger of the confiscation of their goods by reason of their being allowed to remain at the wharf or in the warehouse pending settlement of disputes with consignees

or the disposal of the goods to other people, this consulate-general has taken every opportunity to bring it to the attention of commercial interests in the United States.

In the case in question it seems that the shipment arrived in Habana on July 29, 1907, and therefore storage charges on 28 packages accrued for nearly eight months. The agents of the exporting company are, therefore, exactly right when they state that the charges mentioned are in accordance with the tariff and that the sum total of wharfage, storage, and duties is now greater than the value of the goods.

The remedy of these shippers would have been to have cleared their goods through a bank or a customs broker and had them promptly disposed of or placed in storage where charges are more reasonable, or they could have had them shipped back to the United States. It could not be suggested that the practice of the Cuban authorities in the matter should be changed, when there is absolute warrant for the statement that the demands on wharf space justify the procedure.

SPAIN.

COMPLAINTS AGAINST AMERICAN SHIPPING AGENTS.

Consul-General Benjamin H. Ridgely, of Barcelona, alluding to the fact that he has frequently called attention to the failure of American merchants to forward bills of lading at the time of the shipping of merchandise from the United States to Spain, now adds:

Attention must now be called to the failure of American shipping agents in many instances to ship by direct routes. In consequence of this failure considerable injury has been done to our commerce in Spain, as well as in other countries. Two cases are before me at this writing. The first is a shipment of typewriting machines. These goods were ordered in November, 1907, and it was explained that they must be sent immediately in order that the purchaser, who had just established an agency for American products, might begin business during the active winter season. He waited and waited for the goods, and they finally came on March 23, after he had been assured that they would be shipped no later than December 30.

It now appears that the New York shipping agents got hold of the goods and, instead of shipping them direct to Barcelona by one of the several lines sailing direct to this port from New York, held them in their possession for some time, and finally shipped them via Bremen. As a consequence, they reached here only after having been seven weeks en route. Meanwhile the purchaser of the typewriting machines had lost many opportunities of doing business, and is in such a state of disappointment and annoyance that when the machines finally had arrived he felt very much like having no further business with the manufacturers.

In another instance, a marine motor engine ordered in October by telegram and acknowledgment of the order accepted by telegram has not yet arrived, although the sellers claim to have delivered it to their shipping agents in New York about December 1. It was intended as a sample for a boat builder here, who was anxious to install and show

it actually working during the winter and early spring. This is now impossible, and as a consequence the purchaser has lost what he thinks was his best chance to do business in the goods in question.

According to information which has been given me, both of these failures to deliver goods promptly in Barcelona are due to the neglect of the shipping agents, who in both instances are New York firms.

It is easy to ship direct to Spain from New York at least two or three times a month, and there is no reasonable excuse for these abnormal delays. If shipping agents would only appreciate the harm that is done American commerce by negligence of this character, perhaps they would be more careful.

COMMERCIAL BUREAUS.

GERMANY.

THE AMERICAN CHAMBER OF COMMERCE IN BERLIN.

The following information relative to the efforts of an organization for the simplification of commercial relations and the enlargement of trade between Germany and the United States is furnished by Vice-Consul W. Washington Brunswick of Barmen:

American business in Germany had for many years felt the necessity of an organization to protect its interests, and cope with the many difficult problems which were impossible to the individual. With the idea in view that through organized effort alone could those interests be protected and trade between Germany and the United States increased, the American Chamber of Commerce was organized in 1903, in Berlin, the officers and directors of which were men prominent in the German and American business world.

The constitution of the association requires the president and two-thirds of the members to be American citizens, for the protection of the interests which primarily led to its organization.

This two-thirds clause does not in any way interfere with the interests of the German members, because all individual interests and complaints are thoroughly considered and investigated by the various committees, each of which has a particular line of work allotted to it. Thus the exporter and the importer present their grievances, and if these are found to be detrimental to commercial interests representations are at once made through the proper channels.

SCOPE AND MEMBERSHIP OF THE ASSOCIATION.

The German authorities give immediate attention to complaints of our importers when presented by the association, and this is alone attributable to the impartial and quiet way in which it is working for the common good and a better understanding between the two peoples.

The American consulates in Germany have found in the association a valuable adjunct for giving information and assistance in affairs of business, and this can be readily understood from the fact that the activity of the association is not confined to any one section, its scope being international, embracing as it does the German Empire and the United States. Many commissions which have come to

Germany from the United States have received valuable assistance through the officers and directors of this organization.

The membership of the organization is composed of about 200 men prominent in the American and German business world, and having been familiar with its workings for a number of years, I have endeavored to give a brief outline thereof, to show what a power for the betterment of trade relations a strictly nonpolitical business association can be, and what can be accomplished along lines which are rational, logical, and impartial.

NETHERLANDS.

FREE COMMERCIAL INTELLIGENCE BUREAU FOR INTERNATIONAL TRADING.

In explaining unavoidable delays in securing for correspondents the names and addresses of importers and exporters—no classified lists of such firms being published—Consul-General S. Listoe, of Rotterdam, writes as follows relative to a bureau which supplies all such information:

It may interest business men desiring to secure trade in this country to know that there exists in Amsterdam an institution called the "Bureau voor Handelsinlichtenen" (Commercial Intelligence Bureau) which furnishes addresses and commercial information of nearly every description, free of charge, and that by addressing this bureau direct inquirers will often be able to save valuable time.

The bureau is subsidized by the Dutch Government, and tells of its scope, and the conditions under which information is supplied, as follows:

The bureau abstains from all interest in commercial dealings which it promotes; nor may it enjoy any profits from them. It places its information absolutely free at the disposal of any firm, on the sole condition that the applicant be recommended. According to its statutes guaranty should be given in all instances.

The bureau does not give information as to the financial status of firms. It supplies its information to the best of its ability, but without any responsibility. In no case does its information release the applicant from the obligation of safeguarding his own interests. Applicants should add references (the applicant's bank and two commercial firms by preference in north Europe).

If articles are offered to buyers in Holland or colonies, samples of the offered articles should be sent to the bureau (freight and duty paid). If articles are wanted from Holland or colonies, exact specification of such articles is necessary. Correspondents should address O. Kamerlingh Onnes, director Bureau Voor Handelsinlichtingen, Amsterdam, Holland.

MEXICO.

AUTHORITY ASKED TO ESTABLISH CHAMBERS OF COMMERCE.

Ambassador D. E. Thompson, of Mexico City, forwards a clipping from a Mexican newspaper descriptive of a plan contemplated by the Mexican Government for the establishment of chambers of commerce, from which the following extract is made:

The minister of finance, Lic. Jose Ives Limantour, has sent to congress a very important bill providing for the establishment of chambers of commerce in the most important cities of the Republic, for the purpose of promoting the general welfare of the country, to be the intermediary between the Government and

the business men, to act as arbitrators in cases of disputes, and to effect the liquidation of failing concerns.

The minister of finance thinks that, while the general policies of the Government are an indirect way of increasing trade and commerce, the time has come when the Government should take special measures to aid the commercial interests.

Some chambers of commerce have been working for years in the country, but they have been entirely private institutions, without any official representations and without any authority, their work being limited to mutual aid.

The chambers of commerce which may be organized under the terms of the bill will be called Camaras Nacionales de Comercio, and their purpose will be, in general terms, to look out for the interests of the national commerce.

BRITISH NORTH BORNEO.

CHINESE CHAMBER OF COMMERCE IN SANDAKAN.

Consul Lester Maynard makes the report from Sandakan that a meeting of the principal Chinese merchants and traders was called by the protector of Chinese and superintendent of immigration of the British North Borneo government to consider the advisability of forming a North Borneo Chinese Chamber of Commerce on the same lines and with the same rules as the one in Singapore, Straits Settlements. At a later date a second meeting will be held for the purpose of electing officers and organizing a chamber. As this is the first organization of its kind in British North Borneo, the consul suggests that manufacturers and shippers forward to the Sandakan consulate catalogues and price lists, in duplicate—one for the file of the consulate and the second for the file of the Chinese Chamber of Commerce.

INFORMATION FOR EXPORTERS.

BOOK OF SUGGESTIONS FOR WINNING FOREIGN MARKETS.

Many letters having been received by the Bureau of Manufactures from American exporters making inquiry as to the best methods to pursue in seeking foreign trade, a monograph of 256 pages has been prepared covering various phases of this subject. It is entitled "Winning Foreign Markets," and contains chapters on Methods and Requirements, Success of Italy, Obstacles to Trade, Shipping Facilities, Proper Packing, the Parcel Post, Foreign Advertising, and Patents and Trade Marks. Copies of the book may be secured on application to the Bureau.

INDUSTRIES.

CONDITIONS AND PRODUCTS.

NETHERLANDS.

DECREASED DIAMOND EXPORTS TO AMERICA—EFFECT ON THE INDUSTRY.

Consul Henry H. Morgan, writing from Amsterdam, says that possibly no country of Europe has been relatively affected so disadvantageously by the financial crisis in the United States as the Netherlands, largely on account of the total suspension of the diamond trade. He reviews the market situation as follows:

In 1905 the exports of polished diamonds from the Netherlands to the United States amounted to $9,197,843; in 1906 the exports were $11,633,352.

The year 1907 opened auspiciously and under most favorable conditions for the trade, and it was then thought that the number of diamonds that would be exported to the United States would be far in excess of any previous year, but in the month of July the American buyers began to reduce their purchases, and as the financial crisis in the United States became more acute the orders from America ceased entirely, and from the middle of August up to the end of the year the entire shipment of diamonds through this office did not exceed $75,000, and the total exports for the year amounted to only $7,452,604, as against $11,633,352 for the calendar year 1906. In sympathy with the American market the other markets of the world became affected, but not to the extent anticipated, and while the business was not as good as in previous years the decrease was not of such extent to cause alarm, and considerable satisfaction was found in the fact that China and Japan had during the past year commenced to import large quantities of the cheaper grades of goods.

One danger the diamond people had to contend against and which constituted a source of anxiety was the fear that the United States, their principal customer, having ceased to purchase, the price of diamonds, according to the law of supply and demand, would be considerably reduced, but fortunately for them the business was in exceedingly strong hands, and a tacit agreement was entered into to sell no diamonds under the prevailing market price, which agreement has so far been adhered to. This is evidenced by the statement of an American buyer at this consulate some time ago that he had come here prepared to buy $250,000 worth of diamonds provided he could get them for 30 florins ($12.06) per carat below the market value, but had been unsuccessful. The banks of Amsterdam, with the exception of the Amsterdamsche Bank, which during the height of the crisis declined to advance any money on diamond paper or diamond collateral, are now advancing all that is required at 4 to 4½ per cent.

Those taking a pessimistic view of the situation regarded the closing down of the polishing factories and the throwing out of employ-

ment of 4,000 to 5,000 polishers with considerable anxiety. They contended that these workers would start to polish on their own account, and as the brokers had no control over them they would sell their product at a price considerably below the market value. This in effect did take place to some extent, and there are now about 1,000 workmen polishing diamonds on their own account and selling them at reduced prices, but it is said that they are for the most part rose diamonds; and, as they are only able to turn out at most 2,000 carats per week, this quantity is not liable to have any effect on the market.

FUTURE TRADE PROSPECTS.

The whole question, however, as to whether the price of diamonds is to be kept up is altogether dependent upon what action may be taken by the Rough Diamond Syndicate, of London, controlling the output of the De Beers Company and the Premier Mine Company, which represents about 95 per cent of the world's diamond production. This syndicate, in connection with the De Beers and the Premier Mine, has given to the diamond people of Amsterdam and Antwerp a solemn assurance that under no circumstances will they reduce the prices of rough diamonds, and as they are vitally interested in keeping the prices up, there is every reason to believe that this assurance will be strictly adhered to. It is not to be denied that the diamond brokers of Amsterdam are at present loaded with diamonds, and if the Rough Syndicate should reduce the prices of the rough diamond a great calamity will be brought not only upon themselves, but upon the brokers who would be forced to sacrifice their stocks. At present, for mutual protection, the strong are carrying the weak, but should the price of the unpolished diamond be reduced there would be a rush to cover and the disaster to the trade would be very great.

Possibly the most important and influential diamond broker of Amsterdam, at my request for an expression of opinion regarding the outlook of the diamond industry for the coming year, has given the following opinion:

> As the stock of polished diamonds has not increased during the past six months, on account of all the factories being closed, and as there was much more sold than polished, I shall not be astonished that as soon as there is a demand for diamonds again we shall see the same condition which prevailed after the big lockout of February, 1904. There will be a scarcity of the right goods on account of the reduction to one-half of the output of the De Beers and Premier mines, and a rise in the price of the rough article is not at all improbable. No one can say with any certainty what the results for 1908 will be, but the above-mentioned facts will sufficiently prove that, even if it takes some time before we shall see an improvement in business, there need not be any fear for losses caused by lower rough prices, and this is the main and most important factor of our trade.

MEXICO.

PRESIDENT'S MESSAGE SHOWS INDUSTRIAL AND ECONOMIC ADVANCEMENT.

The message of President Diaz to the Mexican Congress on April 1 called attention to a number of facts relating to the development of that Republic, among which may be noted the following:

> There is a constant growth in the number of applications for concessions to use water courses, subject to Federal jurisdiction, for irrigation and motive

power. In the first half of the current fiscal year 32 concessions involving 163,000 liters (liter=1.05 quarts) per second to be used for the two objects named were granted, and 37 title deeds were issued, some for the purpose of confirming rights previously acquired and others as the result of new concessions.

Two concessions have been granted for the taking of fish and marine products in general, and 4 for the extraction of guano from islands in the Gulf of Mexico and the Pacific Ocean.

PATENTS AND TRADE-MARKS—FISCAL AFFAIRS.

In the six months from July 1 to December 31, 1907, 634 patents of inventions, 28 for industrial designs, and 14 for new models were granted; 478 trade-marks, 5 commercial announcements, and 13 commercial names were registered; and 11 trade-marks were registered under article 187 of the existing law.

The quantity of coin in circulation has been continually on the increase. In the latest six-monthly periods $9,000,000 in gold and $3,000,000 in silver coins of $1 and subsidiary coins have been struck, and adding to these coins the nickel and bronze pieces the total quantity of the new currency put into circulation increased from $98,000,000 to more than $111,000,000, and it is to be observed that during the same period no considerable amount of the national currency left the country, but on the contrary nearly 3,000,000 hard pesos returned hither from abroad.

ENCOURAGEMENT OF AGRICULTURE.

One of the principal measures adopted for the encouragement of agriculture has been a law which concentrated under the jurisdiction of the department of fomento all establishments which aim at imparting a knowledge of husbandry, and which authorized that department to reorganize the methods of agricultural training. * * * The National College of Agriculture and Veterinary Surgery has reopened its classes under a new curriculum and with 240 students from all the States of the Republic.

* * * At all of the experimental stations local colleges will be founded in order to impart to tillers of the soil who have been unable to acquire a scientific knowledge of farming such general principles and practical advice as will enable them to derive better and more remunerative results from their daily toil.

RAILWAY CONSTRUCTION—POSTAL AFFAIRS.

The additions to the railways under Federal jurisdiction have aggregated 462 kilometers (kilometer = 0.62 mile), the total length of those railways at the present time being 18,386 kilometers, and adding the length of railways under the jurisdiction of the States and private lines, which is 4,436 kilometers, the total length of the nation's system of railways is found to be 22,822 kilometers.

The receipts of the Tehuantepec National Railway have continued to grow, due to the new freight traffic. From July to December, 1906, the earnings of the line were $562,000, and in the corresponding period of 1907 they amounted to $1,972,000, showing an increase of $1,410,000.

During the first half of the present fiscal year, 25 new post-offices, 99 agencies, and 10 ambulatory offices were opened, and the total number of offices on December 31 last was 2,909.

The total number of pieces of mail matter of all kinds handled in the first half of the present fiscal year was 90,000,000, against 86,000,000 in the corresponding period of the preceding fiscal year.

During the first half of the current fiscal year there was no intermission in the efforts to improve the Federal telegraph system. The new lines erected totaled 868 kilometers, but the net increase was only 454 kilometers, as some lines in various parts of the country were abandoned. Seven new offices were opened, and three were discontinued. The volume of messages handled and the receipts show an increase of 7½ per cent.

AIDS TO IRRIGATION—NATIONAL AMMUNITION FACTORIES.

The Sonora Scientific Commission has built 5 levees along the Yaqui River as a measure of defense against inundations, has delivered 349 records of posses-

sion and 67 title deeds to peasant proprietors in the region of Bacum, and made 30 grants of arable land to settlers near Torin; inspected and saw to the cleaning out of the irrigation canals; and parceled out the new town site of San Pedro into lots which it also distributed among the inhabitants.

Owing to the urgency of completing the map of the State of Sonora, the commission decided to transfer its headquarters to Magdalena, and work is now in progress for the topographical survey of the northern part of the State.

The plant of the National Cartridge Factory has been completed, and it has entered on the preliminary stages of its operations, leading up to its starting work at full capacity, when the country will no longer be obliged to buy the war munitions which it needs from foreign factories.

A contract has been entered into with the Krupp Works for the installation of a plant for the manufacture in Mexico of smokeless powder for cannon and small arms.

Half of the ammunition wagons for the light 80-millimeter Mondragon guns have been completed.

The inventor of this style of gun has succeeded in transforming his 70-millimeter mounted cannon into a rapid fire gun, and the transformation has been approved by the respective technical commissions.

EDUCATIONAL PROGRESS.

In order to draw still closer the relations which happily exist between the educational corporations of the United States and our own, the subsecretary of public instruction, while at Washington, at the beginning of last month, extended an invitation to the National Association of American School Superintendents to gather in Mexico in the year 1910 for one of its important meetings, which will coincide with a similar meeting of Mexican educators. The invitation was received with marked enthusiasm.

A new building especially constructed for the National Law School was recently inaugurated. The curriculum of that establishment, as of all other institutes of learning under the jurisdiction of the Government, is being more and more directed into practical educative channels.

The growing attendance of pupils at all the public schools—primary, normal, preparatory, professional, and special—gives particular importance to the question of adequate premises. [The message contains details of the plans for increased school accommodations.—B. of M.]

As manual training has been established in all the primary schools, academies have been instituted in the normal schools in order to impart a knowledge of this training to those who are studying for the career of educators.

CANADA.

MAGNITUDE OF THE FISHING INDUSTRY—DISTRIBUTION BY PROVINCES.

Consul Alfred J. Fleming, of Yarmouth, supplies the following information with reference to the fishing industries of Canada for the fiscal year which ended March 31, 1907, the facts having been taken from the recent report of the minister of marine and fisheries:

The report states that the fisheries of Canada are the most extensive of the world. The eastern seacoast of the Maritime Provinces, from the Bay of Fundy to the Straits of Belle Isle, covers a distance of 5,600 miles, more than double that of Great Britain and Ireland, and the salt water inshore area, not considering minor indentations nor the Great Lakes of the West, covers more than 1,500 square miles.

The total fisheries expenditures for the year amounted to $693,685, divided as follows: Fisheries proper, $95,930; fish culture, $118,681; fisheries protection service, $204,837; miscellaneous expenditures, $115,222; distributed as bounties among the deep-sea fishermen of the Maritime Provinces, $159,015.

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VALUE OF THE CATCH.

The total value of the catch, including fish, fish products, seals, etc., was some $3,000,000 less than in the fiscal year 1906, which was caused, nearly altogether, by the phenomenal catch of salmon during the latter year. The following statement shows the catch in the fiscal year 1907, by provinces:

Province.	Value of catch.	Increase (+) and decrease (−).
Nova Scotia	$7,799,160	− $459,925
British Columbia	7,008,347	−2,846,869
New Brunswick	4,906,225	+ 58,135
Quebec	2,175,055	+ 171,312
Ontario	1,784,836	+ 25,893
Prince Edward Island	1,165,939	+ 170,017
Manitoba, Saskatchewan, and Alberta	1,492,923	− 318,647
Total	26,279,485	−3,200,077

The value of the principal kinds of fish, prepared for marketing, was as follows: Salmon, 30,000,000 pounds, packed in 77 canneries, employing 15,000 persons, $5,856,760, a decrease from the preceding year of over $3,000,000; codfish, $3,471,166, of which $3,353,875 worth was dried; haddock, $766,896; hake, $384,490; mackerel, $1,369,728, of which $781,135 was salted, the remainder fresh; lobsters, 10,000,000 cans, and about 10,000,000 fresh or live, $3,422,927, of which $2,522,179 worth was canned. Practically all the live, and a large percentage of the canned, found a market in the United States.

Not counting those engaged in lobster fishing, 76,100 men, and 1,439 vessels, of 40,827 tons, valued at $2,841,875, were engaged in the Dominion fisheries in 1907.

GERMANY.

CONDITIONS ABROAD AFFECT TOY TRADE—PROPOSED PRICE INCREASE.

Consul H. W. Harris advises that a Nuremberg journal recently printed an article on the effect which the prevailing business condition is having on the German toy industry.

It is stated that of a total product of German toys in 1907, estimated worth $25,000,000, about $19,000,000 worth were exported. Of this trade the United States and England took more than half. Financial stringency in both countries, it is stated, has already caused a marked falling off in shipments to them, showing that this branch of German trade is in a marked sense dependent upon prosperity abroad.

In January, 1908, the exports of toys from Germany to the United States amounted to 560 tons, as against 904 tons in January, 1907. The exports to England for January, 1908, were 387 tons, as against 625 tons in the corresponding month of last year, or a total decrease in the two countries of 582 tons. A somewhat similar decrease is also noted in toy shipments to Belgium, British India, the Argentine Republic, Brazil, and Canada, while exports to France, Austria-Hungary, Russia, and Switzerland show increases.

It is stated that, as a result of trade conditions, there has been a reduction of hours of labor in some of the toy factories and in the num-

ber of those employed in others. House industry is said to suffer especially as a result of these conditions, and difficulties appear in carrying out a proposed increase of from 10 to 15 per cent in the price of German toys. The immediate outlook for the industry as a whole is pronounced not altogether favorable.

SWITZERLAND.

FAVORABLE SHOWING OF MANUFACTORIES DURING RECENT YEARS.

The following table published by the Government industrial department and forwarded by Consul A. Lieberknecht, of Zurich, gives the number of manufacturing establishments in Switzerland at the close of 1906 and 1907 and the number of workmen employed therein:

Canton.	1906, establishments.	1907.		Canton.	1906, establishments.	1907.	
		Establishments.	Workmen.			Establishments.	Workmen.
Zurich	1,059	1,102	67,381	Schaffhausen	77	83	6,294
Berne	984	1,024	36,708	Appenzell	233	233	5,327
Lucerne	177	181	7,175	St. Gall	829	863	30,545
Uri	14	15	846	Graubunden	111	116	2,949
Schwyz	69	65	3,429	Aargau	477	494	26,348
Obwalden	19	21	304	Thurgau	381	397	18,412
Nidwalden	22	25	891	Tessin	209	220	6,658
Glarus	99	103	7,906	Waadt	487	521	13,439
Zug	42	45	2,522	Wallis	54	61	1,468
Freiburg	99	104	3,931	Neuenburg	460	469	13,120
Solothurn	233	248	19,438	Geneva	469	500	10,500
Basle:							
City	270	277	15,296	Total	6,988	7,278	307,128
Country	114	111	6,241				

In 1901 Switzerland had 6,080 manufacturing establishments, employing 242,534 workmen, the increase in six years being 1,198 factories, or 16.46 per cent, and 64,594 workmen, or 21.03 per cent.

FOOTWEAR AND LEATHER.

SICILY.

PRIMITIVE METHODS AND EXCELLENT PRODUCT OF THE TANNERIES.

The following information concerning the leather industry of Sicily, and the share of the United States therein, is furnished by Consul Arthur S. Cheney, of Messina:

Sole leather is the principal leather manufactured here, nearly all other varieties consumed being imported. The product is entirely handmade and prepared with tannin, which is preferred to bichromate of potash. Oak bark is mainly employed, in combination with tanning material made from acorn cups. The supply of bark is brought from Africa chiefly, with small quantities from Calabria.

Visiting the largest and best tannery in the province of Messina, where some 8,000 hides are annually prepared, it was strange to observe the primitive methods employed; methods, however, which are productive of a fine finished article. Except the comparatively few and simple hand tools of the workmen, no mechanical appliances of any kind are in use, either in the manufacturing or transportation processes. In this tannery the wages paid are somewhat above the

average and are about as follows, per day: Trimmers, 62 to 68 cents; vatmen, 42 cents; finishers, 77 cents; laborers, 38 cents.

COST OF PRODUCTION—PRICES OF LEATHER—OUTPUT OF TANNERIES.

The total cost of tanning is estimated at 120 lire per 100 kilos ($23.16 per 220 pounds) in the Messina district, and this will not vary much in the other provinces. The prices of Sicilian sole leather vary from $71.42 to $73.35 per 220 pounds, for the product of Acireale, for hides weighing 18, 20, and 22 pounds per half hide, to $77.22 for hides weighing 11, 13, and 15 pounds per half hide for the best Messina article.

There are 13 tanneries in the district of Messina, employing about 380 workmen, using annually about 9,000 Sicilian hides, and about 42,000 from South America, chiefly from Uruguay and Argentina, in addition to about 27,000 calfskins from South America, South Africa, and India. Nearly all the production of these tanneries is sold in Sicily and Calabria, the remainder being sent to Venice, Naples, and towns in the province of Apulia, but none are exported.

In Palermo and its province there are 15 small tanneries, with about 350 employees, producing annually 30,000 tanned hides, of which some 22,000 are imported in the raw state from South America. In Catania are 8 tanneries, with 170 workmen, and an annual production of 34,000 hides, nearly all of South American origin.

In Acireale are 9 large tanneries, employing 250 workmen, and with an annual output of 50,000 hides, all imported raw from South America, and 10,000 calfskins. About 15 other small tanneries are in operation in Vizzini, Termini, Grotte, and Cefalú, giving employment to about 100 workmen in all, and producing annually about 4,000 hides, all coming from local abattoirs.

LEATHER TRADE.

There are about 453 leather dealers in Sicily. As sole leather is the principal production here other varieties are mainly imported, the different sources of supply being about as follows: From the United States, black calf and kid; from France, black calf, kid, chrome, and colored leathers, the "Veau ciré" being most esteemed; from Germany, patent leather, chrome black, and colored leather; from Austria, polished leather and chrome black; from Russia, "Juchten" leather, prepared with birch bark.

Large importations of American half-chrome leathers were formerly made, but Germany has now absorbed this trade by selling at a lower price and sending a softer leather.

American exporters could regain this market if they would ship goods in conformity with the local demand, which is solely for tough hides measuring 8 to 9 feet, or 100 to 115 feet per dozen, and the price should not exceed 1.1 to 1.25 lire (21 to 24 cents) per foot c. i. f. Messina. It is claimed that American exporters, in filling orders, demand that hides measuring 130 to 140 feet per dozen be accepted, while German firms ship exactly according to specifications, and hence are successful in winning trade. There is no sale here among local consumers for hides of over 9 or 10 feet, and importers who receive larger ones in their consignments have them left upon their hands. Given hides of required dimensions at a price competing *with those of* German production, there is a real desire upon the part

of large importers here to purchase in American markets, but American dealers must be prepared to conform to the needs of the trade.

The duty, Government and municipal, upon chrome leather is 19 centesimi per kilo (3.7 cents per 2.2 pounds).

Of goat and kid skins, those measuring about 5 to 6 feet, of fine and strong texture, are especially desired by this market, and this demand is fairly well supplied by home production.

EXPORTS OF SKINS—BY-PRODUCTS OF TANNERIES.

Large numbers of raw skins, goat, kid, sheep, and lamb, are annually exported from Sicily and from the neighboring province of Reggio, on the mainland, viz, to the United States, 583,000; to France, 440,000, a large portion of which eventually finds its way to the United States. No hides of cattle are exported, but large numbers of donkey and horse hides are sent to Toscana.

As by-products from Sicilian tanneries there are 140,000 tons of ox hair annually exported to France, whence the larger portion is reshipped to the United States. Some 320,000 tons of carnasse (material from the fleshy sides of raw skins) are also annually exported, largely to the United States, for glue stock. The larger portion of the product of this material is, however, manufactured into glue in Palermo.

LEATHER MANUFACTURES.

Large quantities of very cheap shoes are made in Sicily, especially in Catania. Custom-made shoes are good and compare well with those of other countries. No exports of shoes are reported.

A small quantity of cheap harness is manufactured here. Most of the highly decorated harness seen on the donkeys, mules, and horses drawing the characteristic Sicilian carts, embellished with wonderfully painted pictures, chiefly of religious and historical subjects, on the body, and with designs in bright colors on wheels and shafts, comes from small manufacturers in Sicily. The larger portion of the finer grades of horse harness is brought from Naples and Milan, but some is manufactured in Catania.

Many ox teams are used here, all of them being harnessed with primitive yokes and breech straps. The small amount of leather entering into these harnesses is tanned and made up in local factories from the cheapest material.

Trunks, valises, and traveling requisites of leather are mainly imported from Germany, none being manufactured here.

[A list of the names of tanneries, leather merchants, harness makers, and exporters of kid and lamb skins in Messina, Catania, Acireale, Palermo, and Reggio, which accompanied Consul Cheney's report, is filed in the Bureau of Manufactures.]

UNITED KINGDOM.

SUDDEN REVIVAL OF THE BOOT AND SHOE INDUSTRY IN ENGLAND.

Consul Frank W. Mahin, in reporting from Nottingham that the boot and shoe industry at Leicester has enjoyed a great revival so far this year, gives the following details:

All the factories have up to date (March 28) worked overtime and to their utmost capacity to fill orders in hand. It is said that all

calculations have been upset by the sudden placing of exceptionally heavy orders. Overtime work has been usual every spring at those factories, and short time (possibly a resultant) has followed at other seasons. Workmen's unions last year passed resolutions deploring this condition, and asking managers of the trade to do their utmost to equalize employment and output during the whole of the year. But unavoidable circumstances thwarted this purpose and produced more overtime than ever at this season.

The explanation is that last autumn the financial crisis reduced orders to a minimum and half-time in factories became general. The return to normal conditions and usual interest rates caused an unprecedented flood of orders, and the output of boots and shoes is reported to be greater than at any former period. The high pressure, it is expected, will continue two months longer (till the last of May) without a single additional order coming to hand.

It is said that the great bulk of the orders are for ladies' shoes of bright finish in glace kid, varied in many specimens with attractive openwork in the front to show the pattern of the stocking. Also, that American designs in both ladies' and gentlemen's wear have had a stimulating effect, and have led to great improvements in fit, style, and general attractiveness. It is added that dull dressed upper leathers, formerly very much in evidence, have, to a large extent, disappeared, and this spring at least 75 per cent of the uppers of all grades of footwear are of either glace or bright-dressed calf, the soles being light and dainty. It is claimed that in high-grade qualities English footwear is not excelled in style or finish by the most noted French or Austrian productions, and that in the matter of price there is a big margin in favor of the home producer.

CHILE.

NOTEWORTHY GROWTH OF THE SHOE AND LEATHER INDUSTRIES.

The national shoe and leather exposition of 1907, held at Santiago, Chile, according to a leading journal of that city, has served to show that the shoe and leather industries of the Republic are at present in a remarkable condition of progress and perfection. The number of factories participating in the exposition were 23, in which are included shoe factories and tanning establishments. The following figures represent the total production, capital, etc., of those factories:

Annual production of tanned and sole leather, 160,000 pesos (peso=0.365 cent); daily production of boots and shoes, 5,670 pairs; number of workingmen employed in the factories 3,510; total capital invested, 16,490,000 pesos. Besides these there are in the Republic many other shoe and leather factories, the total capital of which is estimated at about 34,000,000 pesos.

With these figures in view an idea may be formed of what the shoe and leather industries of Chile represent, the capital invested being estimated at the minimum amount of 50,000,000 pesos. These two industries promote and give life to several other important ones, such as the preparation of tanning woods, lime, etc., and the manufacture of pasteboard boxes, the total annual production of which industries ranges from 12,000,000 to 15,000,000 pesos.

THE BRITISH PATENT LAW.

AS IT AFFECTS FOREIGN MANUFACTURES IN THE UNITED KINGDOM.

In the following report on the sections of the new British patent law, which compels foreign holders of patents in the United Kingdom to manufacture therein the products covered by such patents, Consul Frank W. Mahin, of Nottingham, illustrates the effect of the law in particular manufactures by citing American shoe machines and German aniline colors:

The new act provides, in brief, that a foreign patentee must manufacture his invention in this country within three years after the date of the British patent, if there be a demand for it; otherwise his patent can be revoked. It is conceivable that the strict and broad application of this provision would shut out from the United Kingdom every foreign manufactured product which could be made, and which the British preferred should be made, in this country.

Section 24 provides that any person interested may petition the board of trade, alleging that the reasonable requirements of the public have not been satisfied, and praying for the grant of a compulsory license or the revocation of the patent. If the parties do not come to an agreement themselves, and if satisfied that a prima facie case has been made out, "the board of trade shall refer the petition to the court." If the allegation is proved to the satisfaction of the court, the patentee may be ordered to grant licenses on such terms as the court deems just, or if licenses will not in the court's opinion satisfy the reasonable public requirements, the patent may be revoked by order of the court.

Another important section (38) makes unlawful any contract prohibiting or restricting the purchaser, lessee, or licensee of a patented article or process from using any article or process supplied or owned by any person other than the seller, lessor, or licensor, or his nominees; or requiring the purchaser, lessee, or licensee to acquire from the seller, lessor, or licensor, or his nominees, any article not protected by the patent.

THE LAW AFFECTS AMERICAN MANUFACTURES.

Some kinds of machinery imported from the United States, and probably from other countries also, have been used here under a lease and could not be bought. Complaint has been made that the lessee is tied to the machine for a period of years, paying heavy royalties, which at the end of the period sometimes amount to the price of the machine; and that under the contract he can not use the machine unless all other machines used by him in doing other parts of the work are also held from the same lessor. On the other hand, it is claimed that the leasing system has been of great advantage in several ways, especially to men beginning business or with limited capital; and that, however burdensome the royalty may be, British manufacturers would not have used the system unless it had paid them. Section 38 is obviously intended to abolish the leasing system by illegalizing its monopoly feature.

A British shoe-machinery company, holding the English rights for certain American machines much used in the boot and shoe

industry, are enlarging their works at Leicester from a recent capacity of some 300 employees to a capacity of about 1,000 as the direct result of the new patents act. Prior thereto, it is explained, the machines in question, being protected by patent in Great Britain, had to be imported from the United States excepting such as were made by the British company the holder of the rights in this country, and that they made few of the machines appears from the statement that their Leicester works were engaged chiefly on fitting and repairs. The present enlargement of the works indicates that they will hereafter make all the machines used here, as the new patents law is understood to require.

A large user of American shoe machinery at Leicester says he does not think it will prevent American patentees from making the various parts of their machines in the United States and putting them together here. He adds that in shoemaking "American machinery is the most up-to-date, efficient, and economical for the purpose." From another authority, hostile to imported machinery, it is learned that certain British manufacturers of shoe machinery of British design are equipped chiefly with American plant for such production. No doubt other and probably the majority of British shoe-machinery works are also thus equipped. So in the application of the new law, the United States is interested not only in shoe machinery but also in the apparatus for making it. How far the law will affect American manufactured products generally is yet conjecturable, and depends upon the wants and the disposition of the British people.

GERMAN MANUFACTURES AFFECTED.

Indications are noted of the stimulating effect of the new law on other machinery works in this country, besides the particular one referred to. A result not expected, it is said, by the promoters of the new law is now manifest. It is announced that two large German firms have bought land in Cheshire whereon to erect factories for the manufacture of aniline. The manufacture of aniline and other dyes declined in Great Britain, it is stated, because Germans held the patents. Now the manufacture is to be resumed here, but by Germans who will, it is feared, use German workmen. Even the realization of this fear would not take away all benefit from the new factories, for they must inevitably use some British labor and products in building and operating and in the sustenance of their employees. It is reported that other foreign firms intend following the example of the Germans.

LOCAL EFFECTS OF THE ACT.

PASSING OFF FOREIGN-MADE GOODS—BRITISH MERCHANTS PROTECTED.

The following information concerning the working of the British merchandise act and the protection afforded the British manufacturer and patentee by the new "Patents and Trade Designs act" is furnished by Consul Albert A. Halstead, of Birmingham:

In a letter written by the chairman of the Birmingham Chamber of Commerce, which was recently published in a local newspaper, objection is made by the British manufacturers and by the Birmingham Chamber of Commerce to that provision of the merchandise marks *act of 1887* which requires the country of origin to be indicated on

foreign goods, on the ground that that requirement serves as an advertisement of foreign goods to the disadvantage of British merchants.

The Chamber of Commerce letter is further interesting as indicating the close relation between British chambers of commerce and that branch of the Government which looks after commercial affairs. It read as follows:

Your correspondence columns have furnished evidence lately upon several occasions that the mercantile community do not fully appreciate either the state of the law in regard to fraudulent trading or unfair competition, or the means at their disposal of combating that evil. We desire to offer some observations upon two matters connected with this subject, namely: (*a*) Fraudulent trading which comes within the purview of the merchandise marks act, and (*b*) the protection of British manufacturers and patentees afforded by the patents and designs act, 1907.

The title of the act of 1887, "An act to consolidate and amend the law relating to fraudulent marks on merchandise," clearly indicates its general scope. Section 2 (1) provides that every person who (*a*) forges any trade-mark, or (*b*) falsely applies to goods any trade-mark or any mark so nearly resembling a trade-mark as to be calculated to deceive, or (*c*) makes any die, block, machine or other instrument for the purpose of forging or of being used for forging a trade-mark, or (*e*) disposes of or has in his possession any die, block, machine, or other instrument for the purpose of forging a trade-mark, or (*f*) causes any of the things above mentioned to be done, shall, subject to the provisions of the act and unless he proves that he acted without intent to defraud, be guilty of an offense and be liable to the severe penalties prescribed.

"PASSING OFF" DESCRIBED.

The offense with which we propose to deal is that of "passing off" foreign goods as British, and it is usually perpetrated by means of a false trade description. The merchandise marks act of 1887 (section 3) defines the expression "trade description" as "any description, statement or other indication, direct or indirect" (inter alia) as to the place or country in which any goods were made or produced, and the use of any figure, word, or mark which, according to the custom of the trade, is commonly taken to be an indication of origin, is to be deemed to be a trade description. A false trade description is defined as "a trade description which is false in a material respect as regards the goods to which it is applied," and includes every alteration of a trade description, whether by way of addition, effacement or otherwise, where that alteration makes the description false in a material respect.

There are other provisions in the act, but those which have been quoted are those which it is necessary to consider in connection with a charge of "passing off" of foreign goods as British to the detriment of a trade or district. It needs to be explained that "passing off" is a fraud which may be perpetrated in a variety of ways. For instance, it is conceivable that the goods themselves and the coverings may be without marks and that a "false trade description" may be applied to some other thing—e. g., a letter or an invoice.

The Birmingham Chamber of Commerce is at the present time dealing with a case where the "passing off" took this particular form in relation to an important commodity for the production of which this district is a world center.

We strongly recommend the trading community and others interested in the welfare of British industry to give their most careful attention to these points, and to consult the chamber of commerce with regard to any case where there appears to be an attempt to mislead the public as to the foreign origin of goods offered or exposed for sale in this country. The whole of the circumstances can then be investigated fully, and if a prima facie case can be made out the question of prosecution can be considered.

EFFECTS OF THE NEW PATENTS AND DESIGNS ACT.

One of the functions of the chamber of commerce is to protect British commerce and industry from unfair competition, and in this connection the patents and designs act of 1907, which was passed mainly through the efforts of chambers of commerce, is interesting and its enactment marks a distinct step forward in our commercial legislation.

Under the new act provision is made for the revocation of patents and the cancellation of copyright in designs if the patented article or process is used for manufacture exclusively or mainly outside the Kingdom. The beneficial effect of these provisions is already making itself felt, in regard particularly to patents, by the establishment of factories in this country by foreign patentees who have so far been in the habit of manufacturing abroad.

In a speech he delivered a little while ago at the Manchester Chamber of Commerce the president of the board of trade referred to the initiative taken by the chambers of commerce in connection with the new act, and charged them with the responsibility of seeing that the compulsory working sections are made effective. This again is a responsibility which can only be satisfactorily carried out with the cooperation of the commercial community, and it is probable that the chamber of commerce will very shortly issue a pronouncement on the subject.

HOUSE BUILDING IN CANTON.

CONCRETE AND STEEL—LUMBER PRICES—LABOR AND WAGES.

Vice-Consul-General Hubert G. Baugh furnishes the following information concerning building operations in Canton, China's southern metropolis, and the conditions governing the same:

The extent and growth of construction in concrete and steel in Canton is necessarily limited, owing to the small number of foreigners here, by and for whom almost all this sort of work is done. Three buildings of reenforced concrete are now under construction; also large cement works of structural steel, the later for the provincial government, though being created by Straits Settlements contractors, through a local firm of architects. Chinese building at its present stage offers no field for new methods of work, and it is only in such enterprises as these cement works that recourse may be expected to foreign styles of construction.

These works in themselves are an evidence of the great demand for cement for reenforced concrete construction throughout the Far East. Cement works of Hongkong have almost a monopoly of this business at present, and as nearly all their material comes from Chinese territory these new Government works may be expected to push them for the control of the market. German cement is imported mainly because the local supply is insufficient. However, this increase in the use of reenforced concrete applies only to American and European settlements, the Chinese using brick almost exclusively. Canton has less than 500 foreign residents, but the amount of concrete construction keeps pace, in proportion to the population, with foreign cities.

As in the Far East in general, in Canton the white ant causes an immense amount of destruction, very few buildings, if any, being free from its ravages, and as reenforced concrete can be used in the place of wood in almost every part of a building, it is hoped that it will be the long-looked-for remedy, though it remains yet to be seen whether even it can keep out this pest. Should it prove successful it will undoubtedly rapidly supersede older forms of construction.

SUPPLY OF MATERIALS.

With the exception of steel, almost all the material needed is secured locally or from Hongkong. The steel is furnished by the Trussed Concrete Steel Company of Detroit, proprietors of the Kahn

system of reenforced concrete, which is the system used exclusively here. Cement is furnished by a Hongkong cement works at $2.50 a barrel, though some also comes from Germany. The rock used in the manufacture of Hongkong cement is obtained from various parts of this province, which possesses an unlimited supply. The Government works now in course of construction will have the advantage over the Hongkong plant of not having to pay the small export duty charged on all limestone taken out of China. Sand of excellent quality is at hand in any quantities desired, costing 15 cents per cubic yard; broken stone is also available in unlimited quantities at $1.50 per cubic yard, but there is no gravel. Hollow burnt clay tile, such as is in common use in the United States, is not manufactured and has not been used. Lumber costs 3 cents per board foot. China fir is most commonly used, but Oregon pine is imported to some extent. Foreign building material comes in with a 5 per cent ad valorem duty. Shipments from New York take from sixty to eighty days in transit, those from San Francisco and the Pacific coast about half that time. English and German firms import structural steel to the amount of about 400 tons a year.

The matter of exchange has to be considered in all importations, for the rate varies continually. One dollar Mexican is approximately the equivalent of 50 cents gold, but is seldom exactly that. As these variations can not be foretold, an element of risk is present in nearly every purchase.

LABOR AND WAGES—PAYMENTS—BANKS—CREDITS, ETC.

Labor is plentiful and cheap, but careful supervision by foreign overseers about the finer parts of the work is customary. Ordinary laborers are paid about 15 cents a day, carpenters 25, and masons 30 cents. A large part of the carrying, as of excavated earth or of sand, is done by women. The local architectural firm alluded to has nearly all the construction business in Canton, working through Chinese contractors, who supply the workmen as well as the materials for the huge sheds of matting, which are always erected first, to shelter the workmen from sun and rain.

Payments on private work are made as on ordinary contract work in the United States. On Government work there is more or less delay, as the matter must pass through several hands, but with this exception there is no trouble in securing payments. Banking facilities are of the best, as the International Banking Corporation of New York and the French Bank of Indo-China have branches here, while the Hongkong and Shanghai Banking Corporation is represented by a local business house. Credits are investigated through the International Banking Corporation. Payment on materials imported from the United States is usually made by three days' sight drafts. No hindrances of any kind are imposed by the Government.

The municipal council of the foreign settlement has placed a limit of 60 feet on the height of all buildings erected within its borders, but otherwise builders are free to plan as they wish. It is not to be expected that the field for this enterprise in Canton will ever be very large, but it has a good foothold already and will, in all probability, grow in favor wherever foreigners are concerned.

GERMAN COLONIAL PROGRESS.

DEVELOPMENT OF VARIOUS POSSESSIONS IN AFRICA AND EAST INDIES.

Writing from Tsingtau, Consul Wilbur T. Gracey sends the following notes on recent progress in German colonies, the facts having been gleaned from a German colonial paper:

Exports through the ports of German East Africa have increased 5,500,000 marks (mark=23.8 cents) during the past year, lumber, rice, tobacco, and cotton showing the greatest advance.

In the coffee districts of German East Africa, about Usambara, it was found necessary some years ago to plant trees to protect the coffee trees from the prevalent winds. Mulberries were used for this, and proved well adapted to the climate. They grew well, and a number of companies have now imported cocoons, intending to experiment with silk culture. If the new industry proves a success, a new source of income will be established for the coffee plantations, many of which do not pay now.

With the year ending March, 1907, the Usambara Railway passed from a nonpaying to a paying enterprise; 160,000 passengers paid 84,000 rupees (rupee=32.44 cents) in passage money, 7,500 tons of freight paid 80,000 rupees, 3,000 head of live stock paid 3,700 rupees, and other sources of income such as excess baggage brought the total receipts up to 184,000 rupees. As expenses amounted to only 99,000 rupees, a profit of 85,000 rupees was left. Of the latter amount 50,000 rupees were added to various funds, leaving 35,000 rupees for stockholders.

TWO PIERS DESTROYED BY TEREDOS.

German Southwest Africa has met a rather heavy setback in the total destruction of the two landing piers at Luderitzbucht by teredos. This has resulted in the steamer lines refusing to accept any except light freight not damageable by water. Work is rapidly going forward on new wharf accommodations, and it is hoped that steamers will again soon be able to land.

Surveys are being made on a railway line to Warmbad, in German Southwest Africa. The intention is not to build the line at present, but to gain data for presentation to the Government, with the hope that it will take part in the undertaking.

A great deal of work is being done in Kamerun in the line of wagon-road building, where railroads are impossible at present. All the important towns and plantations are being connected with good highways, much to the benefit of trade. The governor of the colony has recently issued an order, making 6.6 pounds the minimum weight of ivory tusks that can be exported. The minimum was 11 pounds, which merchants claimed was too high. The commercial interests of the district are now trying to get permission to sell the natives flint locks and black powder, but permission to do this has so far been refused.

The seat of the colonial government of German New Guinea is shortly to be moved from Herbertshoehe to Simpsonhafen. The reason is that the port at the former place was bad, while the latter is very good. As a result, shipping went there and the old place has *lost its importance.*

UTILIZATION OF WRACK.

SEAWEED AS A CHEMICAL PRODUCER AND FERTILIZER.

In answer to many inquiries touching the use of certain classes of seaweeds cast up on the southern coast of England in the manufacture of iodine and as fertilizers, Consul Albert Swalm, of Southhampton, furnishes the following information:

From inquiries made along the south coast of England of persons supposed to know all about the matter I learn that no use is made of the "sea-wrack," as it is called, commonly, save as a fertilizer, applied without any chemical preparation, or no more than that given to ordinary stable manure. Old-time farm leases reserved all this wrack as part of the general property, to be used as might be directed, but it could not be sold away from the farm, and as long as there was any it could be claimed by the tenant in a pro rata distribution.

MANUFACTURE OF IODINE FROM SEAWEED.

All inquiries were made on the supposition that at the present time use was made of the wrack in the production of iodine, the inquiries leading to the Channel Islands, where the manufacture was at one time carried on. On the English coast it never was used in ash production for chemical purposes, but it was and is still used as a valuable fertilizer, as top dressing on certain soils, or cut up and plowed under in the lighter soils, with a continuing benefit for several years.

A retired officer of the United States Navy, who spent some time on the Channel Islands, secured the following data from the files of the chief analyst of the island of Jersey:

The seaweeds most frequently thrown up on the Atlantic coast, botanically classed as "Fucus vesiculosis" (bladder wrack) and "Fucus nodosis" (knobbed wrack), are found here, coming in the track of the Gulf Stream across the Atlantic. Up to about 1885 the English makers used an average of 7,600 tons of dry wrack in the making of iodine, it then having a commercial value of $4 per pound, but the great reduction works in the Chilean nitrate beds soon brought the price down so that the use of the dry wrack was found unprofitable and that industry ended. A British scientist says:

UTILIZATION OF SEAWEED.

In Jersey, seaweed, or "vraic," is only used as a fertilizer, and it is applied either fresh or dried, being scattered as a top dressing over the grass to sweeten the pasturage, or worked into the ground for potato culture. It is valuable for the nitrogen and potash it contains, and also acts mechanically by attracting moisture, an advantage on light, open soils, but a decided disadvantage on cold, heavy land.

To prevent waste and exhaustion, the collection of seaweed (other than driftweed cast up by the storms) is regulated by law in Jersey, and it can only be cut on certain dates twice a year, which are fixed periodically by the royal court of the island, after consulting with the parish authorities concerned.

The average composition of the kinds chiefly met with here have been worked out by me and show as follows, after having been dried at 212 degrees. Weeds cut in March: Organic matter, 81.4; ash, 18.6; nitrogen, 1.91; potash, 2.62; phosphoric acid, 0.36; lime, 1.3; magnesia, 1.06; oxide of iron, 1.04; sulphuric acid, 3.96; chlorine, 2.5; silica, 0.53; carbonic acid, 0.39; less oxygen replaced by chlorine, 0.55. [This makes a percentage of 115.67, but it is as quoted by the consul.—B. of M.]

There is not much seaweed burned at the present time, and vraic ashes are now difficult to obtain. At one time poor cottagers by the sea used the dried

seaweed as a fuel, and also burned vraic in order to sell the ashes as a fertilizer, but as all the nitrogen was thereby lost this was somewhat wasteful.

Burning for iodine manufacture in Jersey never, to my knowledge, went beyond the experimental stage. A small factory was started about ten years ago and lasted two years, during which period it turned out between 250 and 300 pounds of iodine per annum, made at first from Irish ashes—kelp—and later from some specially burned "colley" (Laminaria) gathered in St. Quens Bay, Jersey. I visited the factory at the time and have still some of the iodine. The proprietor tells me that he got as much as 12 shillings and 6 pence ($3.04) per pound for the iodine. He also obtained from 2 to 3 tons of potash salts as a by-product, which he used as an ingredient in the manufacture of potato fertilizer. Unfortunately, the venture did not prove profitable.

I also understand that about two years ago a quantity of vraic was burned here and a cargo of the ashes sent to Scotland as an experiment, but it is believed that the freight was prohibitive.

The fact is that the only seaweed profitable for the manufacture of iodine is that known as colley, or sea-tangle (Laminaria digitala, sternophylla, and saccharina), three varieties differing slightly in the shape of the leaf, but all with long, fleshy fronds, often 4 to 6 feet in length, which grow at a depth of about 30 feet below high-water level, and are cast ashore after storms. These yield about 8 to 12 pounds of iodine to the ton of dry wrack. All the other varieties fall below this yield.

The price of iodine is now about 9 shillings ($2.75) per pound, wholesale, and is (or was) controlled by agreement between the larger producers, the nitrate companies having the chief voice in the matter.

A leading Scotch maker of iodine tried hard to turn to account the other products of seaweed, notably "algin," a most interesting body, and which he put to many uses, but I have not heard that the outcome was financially successful.

On the whole the question of seaweed utilization presents many difficulties, and the competition of the nitrate companies has rendered iodine manufacture from seaweeds speculative in the extreme.

AFRICAN WHALING ENTERPRISE.

NORWEGIANS WILL ESTABLISH OPERATIONS AT PORT OF DURBAN.

Consul Edwin S. Cunningham, of Durban, advises that a company, with head offices at Sandefjord, Norway, has recently been formed, with the object of exploiting the whaling grounds adjacent to the South African coast, particularly that of Natal. The consul details the plans as follows:

There is to be a station of the company at Durban, where a plant for extracting oil and bone will be established. The method to be pursued will be the same that has been adopted with success in Norway, and the men engaged in the work will be Norwegians who have had experience in the industry. Briefly, the plan is to use two small whaling steamers which have been acquired by the company, and, making Durban the base of operations, to scour the coastwise waters, and as soon as a whale is taken, to tow the body into the harbor, where the work of extraction will be done. By this means, it is said that a saving of time is effected, and the process of reduction is facilitated.

It is claimed that these steam whalers are able to take all kinds of whales with comparative immunity from risk, as the explosive harpoon is fired directly from the steamer, and the danger of pursuing the "fish" in small boats is obviated. There are large numbers of whales near this coast, and there seems to be a fair prospect of success for a small company run on the most economical lines. The capital of the company is $75,000, and shares to the full amount have been taken in Natal and Norway.

LAUNDRIES IN BUENOS AIRES.

OUTLOOK FOR THE INTRODUCTION OF NEW AMERICAN BUSINESS.

In reply to an inquiry from an Ohio manufacturer of laundry machinery as to the condition of the laundry business in Buenos Aires, Consul-General Alban G. Snyder furnishes the following information:

The population of Buenos Aires numbers 1,200,000, of which about 80 per cent is foreign, consisting of Italians, Spanish, French, English, German, Swiss, etc., in the order named, the Italians forming about 60 per cent of the foreign population, although in the last year Spanish immigration has far exceeded all others.

There are five railroads entering the Argentine capital, all operating sleeping and dining cars. About 3,000 ships, more or less, enter and clear during a year, remaining in port from four to thirty days, although this time is very irregular; mail steamers usually lie in port about five to seven days.

The city contains 20 large hotels, of over 50 bedrooms each, while there are numbers of smaller hotels of all classes and sizes.

The water of the river is good, but is far too expensive, and where large quantities of water are needed wells are usually drilled. Steam coal costs from 30 to 35 shillings ($7.30 to $8.52) a ton, Cardiff being generally used. Male help is paid $1.50 to $5 Argentine paper (66 cents to $2.20 gold) a day, female from $1 to $2.50 (44 cents to $1.10 gold) a day. The supply of unskilled labor is adequate.

Real estate and rents are high at present, and it would be almost impossible to secure any suitable location for a laundry in the center of the city; one would have to go to the suburbs, and even there real estate is high. The value of real estate varies so much that it is impossible to give any idea of prices, but most transactions in this line are affected through auctions.

LAUNDRY PRICES, TAXES, AND LAUNDRY WORK.

The prices paid by railroads and hotels at the present time for laundry work are $2.40 Argentina paper ($1.04 gold) per 100 pieces, and this work is done by the several steam laundries already established, of which there are five, while two more are in course of construction by Americans.

Taxes for this class of business vary between $200, $500, and $1,000 Argentine paper ($88, $220, and $440 gold) a year, according to the amount of business done. There is no possibility of securing a concession from the national or municipal authorities for exclusive privileges in connection with the laundry business.

All hand laundries collect and deliver work to the customers. The work done by the hand laundries is generally considered poor, and the acids used for cleaning are injurious to the clothes. None of the steam laundries cater to private families, and a well-established one of this class ought to do well.

Outside of Buenos Aires, there are five cities in Argentina with a population of 50,000 or over, viz: Tucuman, 50,000; Bahia Blanca, 60,000; Cordoba, 65,000; La Plata, 80,000; Rosario, 135,000.

PAPER FROM BAGASSE.

GREAT RESULTS CLAIMED FOR A TRINIDAD INVENTION.

Consul-General Richard Guenther, of Frankfort, furnishes the following information, published in a German journal, concerning the invention of a Trinidad planter for the manufacture of paper from sugar-cane bagasse:

For a long time the bagasse had been experimented with in order to make cellulose out of it for paper manufacturing, but without success. It is now reported that a Trinidad sugar planter has, after several years of experiments, arrived at the conclusion that a superior article of paper can be made from the bagasse of sugar cane, as also of the bagasse of other plants of that district. It is stated that he has erected paper works in connection with his sugar factory at an expense of $85,000.

The bagasse, after having been three times ground and pressed in sugar presses, is carried, automatically, to the paper mill and is there treated by a process of the inventor. It is then boiled for several hours, passed through rotating millstones, put into the usual machines for manufacturing paper pulp, and afterwards cut up under hydraulic pressure.

The inventor claims that 84 per cent of the bagasse is transformed into paper pulp, and he believes that his invention will revolutionize the cane-sugar industry, as it would be remunerative to plant sugar cane primarily for making paper, with the sugar as a by-product. Sugar making would again become very remunerative, as bagasse, for fuel, had approximately a value of only about $1.80 per ton.

The cost of paper production by this process is said to be very low, as the surplus steam of the sugar mills can be utilized. The value of the paper made from the bagasse is estimated to be $24 per ton. During the time that no sugar is made the paper mill is kept running by using other materials found in the district for paper making, banana bagasse, paragrass bagasse, and that of other fibers.

SWISS TRADE COMBINATIONS.

GOVERNMENTAL RESTRICTION OF MONOPOLIES AND TRADE AGREEMENTS.

Consul R. E. Mansfield, writing from Lucerne, says that in Switzerland the trust, or trade combination, through which prices of the products of certain manufactories and articles controlled by corporations possessing large capital are manipulated to the prejudice of small concerns competing in the business are practically unknown. The consul continues:

In the Confederation commerce is conducted on purely competitive lines and discrimination against the small concern, with limited capital and employing only a few hands, is not indulged in by more powerful competitors, commission houses, and purchasing agents. The great industrial prosperity and productive capacity of Switzerland is due largely to the fact that hundreds of small manufactories,

many of them employing only a few hands and operating under very primitive methods, are running in all parts of the country. Their existence depends upon fair and open competition in the markets, and the employment of comparatively cheap labor.

The unfair practices resorted to in some countries, of large concerns reducing prices on certain articles to ruinously low figures thereby forcing less favored competitors out of the trade, and then increasing the price of their products to a point which enables them to quickly cover the loss sustained by the reduction, is not known in Switzerland.

Agreements or combinations for the regulation and maintenance of prices of certain commercial commodities are limited to the merchants. Uniformity, or fixed prices, may be arranged, but agreements to discriminate against or to prohibit the sale of any article is not permitted by law.

Under this rule of uniform treatment and open competition there are an unusual number of industrial institutions and commercial concerns with small capital doing a profitable business and contributing largely to the material progress and general prosperity of the country. Added to this is the universal industry and characteristic economy of the Swiss people, which has enabled them to build up and maintain, under naturally unfavorable conditions, an international trade amounting to considerably over $300,000,000 annually.

How long these favorable trade conditions will continue is difficult to predict. In the past few years the cost of living in Switzerland has increased to such an extent that wages of both artisans and laborers have advanced very materially, which fact for a time tends to affect adversely the business of the small producer much more in proportion than that of the large manufacturers who employ more modern methods in the business.

SALT PRODUCTION.

CHINA.

MANUFACTURE, CONSUMPTION, REVENUE FROM TAX, PRICE, ETC.

The following information concerning salt production and consumption in China is furnished by Consul Wilbur T. Gracey, of Tsingtau, who states that the statistics were secured mainly from a German Government report:

Salt in China is produced from salt wells and sea water by boiling and evaporation. The evaporated is granular and is not considered of as good quality as that obtained by the process of boiling. The annual consumption of salt in China is estimated at 1,512,000 metric tons.

The salt tax is exclusively a Government monopoly. All the salt produced must be sold either to the Government or to licensed merchants, who purchase the right to supply certain areas of consumption. These merchants receive salt certificates, empowering them to buy and sell certain quantities of salt. The salt tax, as fixed in 1905, is 1 tael per picul (71.6 cents per 133⅓ pounds).

The salt tax is considered one of the principal revenues of the Empire, and it is estimated that it amounts to 13,500,000 haikwan

taels (about $9,000,000) per annum, to which, according to some authorities, should be added salt land tax, salt head tax, salt land rent, and the salt pan tax.

The retail price of salt varies in the different parts of the Empire, but averages from 25 to 60 cash per catty (1.6 to 3.8 cents per 1⅓ pounds). The importation of salt into China is prohibited by treaty.

TURKS ISLANDS.

VALUE OF THE INDUSTRY—EXPORTS TO THE UNITED STATES.

According to statistics supplied by Consul J. A. Howells, the salt exports for the Turks and Caicos islands during the calendar year 1907 amounted to 1,420,052 bushels, valued at $76,527, of which 1,073,702 bushels, valued at $53,535, were exported to the United States, the balance going to Canada, Jamaica, Haiti, Santo Domingo, St. Pierre, and Bermuda. On account of the unusual rains in February and March, and the usual rains expected in May, it is thought that no salt can be raked in 1908 before June. The stock on hand is estimated at between 500,000 and 600,000 bushels.

ALCOHOL FROM PEAT.

CONVERTING FACTORIES BEING ESTABLISHED IN NORTHERN EUROPE.

Writing from Mannheim, Consul Samuel H. Shank says that the large deposits of peat in America which have hitherto been of practically no value may prove to be of great worth if the recent experiments of a French chemist in distilling alcohol from peat prove to be practical. He describes the progress made:

The first industrial trials for manufacturing alcohol from peat date from the year 1870, when the Danish chemist Zetterlund hydrated and converted by means of sulphuric acid the cellulose of the peat into a soluble carbohydrate, which was fermented by letting it stand. The very small production obtained in the beginning was increased by different chemists, including Lagerheim, Trestadius, and Eckardsström.

Important progress has been made in the last two years by Raynaud, by fermenting the carbohydrate sap by means of a special yeast, which has hitherto been kept secret. A Copenhagen company has been founded, which already has two experimental plants established, one in Denmark and the other in France. The results obtained are said to be so encouraging that the erection of an industrial plant in the north of Germany is imminent. According to statements made by Professor Ramsay, one ton of dry peat is said to furnish about 162 liters (liter=1.05 quarts) pure spirits and about 66 pounds of sulphate of ammonia of 100 per cent.

The Danish company asserts that the manufacturing costs of 1 liter of alcohol of 97 per cent are at most 11 pfennigs (2.6 cents), whereas the cost of the process of distilling from potatoes is about 38 to 42 pfennigs (9 to 10 cents). It is self-evident that such a process would be of the greatest interest, not only from an agricultural standpoint, but especially for new uses in the chemical industry and as a cheap material for lighting and power.

LABOR WORLD.

LAWS AFFECTING WORKMEN.

UNITED KINGDOM.

BRITISH EMPLOYERS ADAPT THEMSELVES TO NEW ACCIDENT LAW.

Consul Maxwell Blake reports from Dunfermline that, although it is early to judge the value of the "workman's compensation act," which became a law in Great Britain last July, its operations to date discloses much of speculative interest, which he reviews briefly:

It is stated that a year ago insurance companies issued millions of advertising circulars to the alarmed householders of the Kingdom, offering to them protective policies against the almost innumerable accidents and injuries to which their domestic servants were exposed in the ordinary course of their employments; for all of which, under the act of July, 1907, the employer henceforth was to become responsible.

It was a new kind of risk for the insurance companies, and at first great disparity of rates prevailed, as well as an indifference on the part of the older companies to write this kind of insurance; an attitude which they were soon forced to reverse, in order to protect themselves in other lines.

When this act became a law, the result was a rush on the part of the applicants, and although there were more than 60 companies actively soliciting the field, business became so heavy that many of the companies were actually unable to issue policies fast enough, resulting in some cases in a delay of several months between the date of application and the delivery of the policy.

This congestion however has now abated; competition is keener, and rates have been lowered to a practical uniformity. Following are the rates (in American currency) per annum for policies providing full and complete indemnity in respect of all legal liability:

Classes.	Legal liability.	Extended policy.[a]	Classes.	Legal liability.	Extended policy.[a]
Indoor servants, per person	$0.68	$1.22	Gamekeepers	$2.43	$3.65
Gardeners	1.22	1.82	Chauffeurs	4.87	7.30
Coachmen and grooms	1.82	2.43			

[a] The term "extended policy" includes additional benefits which are designed especially to meet the requirements of householders who recognize a moral obligation to their servants in addition to that imposed by statute. It covers disabilities arising from typhus or scarlet fevers, typhoid, smallpox, measles, diphtheria, pneumonia, pleurisy, erysipelas, and for carbuncle. Allowance for medical expenses is also made for any of the specified diseases.

These rates cover all accidents incident to the occupations named. Upon the present showing, it is presumed that there will be a profit in this kind of risk, but it is very unlikely to ever compare with the remunerations of other kinds of insurance. For the first six weeks

under this law, one company reported 186 claims, including "two fatals." The claims so far have been for such trivial injuries as slight burns, splinters in the hand, finger cuts, sprained wrists and ankles, all of which, if obviously bona fide, are promptly settled.

The companies realize that there is a temptation to collusion on the part of the householder, and therefore possibility for the practice of deception, but they can protect each other to such an extent that this is only possible to a very limited extent.

EMPLOYERS' LIABILITY.

In the event of an accident to a servant arising out of and in the course of employment, the employer may be liable for the following compensation: Fatal accidents—Three years' wages, with a maximum of £300 ($1,460) if dependents are left. Nonfatal accidents—Half wages up to £1 ($4.86) per week during incapacity, or for life if the incapacity is permanent.

Under the provisions of the same act all employers of labor, manual as well as clerical, are liable to pay compensation in respect of any accident to an employee arising out of or in the course of his or her employment.

For clerks, typists, and others engaged in clerical work, the employer is liable, in the event of death by accident, to three years' earnings up to £300, but not less than £150 ($730), if the deceased leaves anyone totally dependent upon him or her; during total disablement by accident, if under 21 years of age, full wages up to 10 shillings ($2.43) per week; if over 21 years of age, half wages up to 20 shillings per week. In the event of the injury being permanent, the foregoing compensation would be paid for the whole term of life. The rate of premium for the above is 3 shillings 6 pence (85 cents) per £100 ($486.65) on total annual wages and salaries.

CANADA.

LEGISLATION LOOKING TOWARD THE ADJUSTMENT OF LABOR PROBLEMS.

Consul-General William Harrison Bradley, of Montreal, furnishes the following statistics concerning trade disputes in Canada and the effect of the new industrial investigation law in their peaceful settlement, prepared by Vice-Consul-General Gorman:

During the year 1906–7 there were 139 trade disputes in Canada, 5 more than in the preceding year, and 35 more than in 1904–5. Nearly one-half of the strikes occurred in Ontario. The question of wages entered into 82 disputes, and the reorganization of the union contributed 13 cases. Fifty disputes ended in favor of the employers, 41 in favor of the employees, and 32 were compromised. In 5 cases the strikes were partly successful.

The most important legislation enacted during the year affecting industrial and labor conditions was the industrial disputes investigation act, which became law on March 22, 1907. A feature of the new act is its provision that before a strike or lockout can be legally declared in a dispute between employer and employees, in connection with a mine or any industry connected with a public utility, it shall be submitted to a board of conciliation and investigation, established under the act with a view to arriving at a settlement. The act demands an investigation before the declaration of a strike in the

class of industries stated, in order that the parties to the differences may be brought together, and a degree of conference and discussion secured.

ADVANCE NOTICES REQUIRED—SETTLEMENT OF DISPUTES.

Further provisions of the act require that employers and employees shall give at least 30 days' notice of an intended change affecting conditions of employment with respect to wages or hours, and that pending proceedings before a board the relation to each other of the parties to the dispute shall remain unchanged, and neither party shall do anything tending to bring about a lockout or a strike. Penalties are provided for infringement of the provisions of the act.

Two other important features of the act are those which provide that the statute may be made applicable to disputes other than those relating to mines or public utilities when the parties concerned in such disputes may so desire, and the one which provides for making obligatory and binding the award of the board with regard to any dispute referred to it.

The board of conciliation and investigation as established under the act will consist of three members, two appointed by the minister of labor, on the recommendation of the respective parties to the difference, and the third appointed on the recommendation of the two first appointed. If these fail to agree within five days on a recommendation to the minister of labor the third member is appointed by the minister himself; the third member to be the chairman of the board.

The application forwarded to the minister of labor asking for the establishment of a board must mention the nature and cause of the dispute, an approximate estimate of the number of persons affected, and the efforts made by the parties to adjust their dispute. The application must also be accompanied by "a statutory declaration, setting forth that failing an adjustment of the dispute, and a reference thereof by the minister to a board of conciliation and investigation under the act, to the best of the knowledge and belief of the declarant a lockout or strike, as the case may be, will be declared, and that the necessary authority to declare such lockout or strike has been obtained." The board has power to summon and enforce the attendance of witnesses, administer oaths, and to do all that is necessary to secure a full investigation.

From March 22, 1907, the date of the passage of the act, to February 15, 1908, of the 30 applications for proceeding under the act 28 strikes were averted or ended.

ITALY.

NEW LAW GOVERNING THE EMPLOYMENT OF WOMEN AND CHILDREN.

Consul James E. Dunning, of Milan, transmits a translation of the revised law governing the employment of women and children in Italy, promulgated on January 16, 1908, which is on file in the Bureau of Manufactures. The salient provisions of this law are as follows:

Persons of either sex under 12 years may not be admitted to industrial establishments, workrooms, building operations, outside

work of any kind, or to mines and tunnels. For admission to labor in mines and tunnels the age must be 13 full years when mechanical traction is employed, and full 14 years when mechanical traction is not employed, and females of all ages are forbidden to labor of this nature. Females of less than 21 full years will not be admitted to dangerous labor of any kind.

Persons of either sex of from 12 to 15 full years may not be employed in any labor more than eleven hours a day, nor can females of any age be employed for more than twelve hours a day.

The labor of women and children must be interrupted daily by one or several periods of repose. Children and minor women may never continue longer than 6 hours without interruption. The law provides that employers shall take such measures, in the workrooms, eating rooms, dormitories, etc., as will safeguard the health and morals of children, and females of any age. Night work is forbidden for all females and for males of less than 15 full years.

BRITISH RAILWAY EMPLOYEES.

WAGES PAID, WORKING HOURS, AND LABOR SYSTEM WELL CLASSIFIED.

Consul Albert W. Swalm, of Southampton, has gathered from various sources in England data on railway employees and wages paid in the United Kingdom, which he presents as follows:

A report on the number of railway employees in England, with the amount of wages paid by classes, just published by the Amalgamated Society of Railway Servants, is the first complete one of the kind that has yet been issued. It was prepared by the secretary from reports called for last August, and may be accepted as correct. The report covers, for the United Kingdom, no less than 259,280 railway employees, who are always called in England, by law and usage, "railway servants." The fact is shown that over 100,000 of these are working at a wage of £1, or $4.86 per week, and are given in three several wage groups as follows:

Group.	England and Wales.	Scotland.	Ireland.	United Kingdom.
$4.86 and under	81,300	12,960	6,650	100,930
$5.10 to $7.29	113,780	13,410	1,640	128,810
$7.35 and over	26,610	2,320	810	29,540
Total	221,690	28,690	8,900	259,280

SMALL PAY FOR WORKMEN.

These figures indicate that more than one-half of the railway employees of the United Kingdom receive £1 to £1 10s., or $4.86 to $7.29 per week. It also appears that only about 11 per cent receive more than $7.50 per week. In these classifications it should be borne in mind that the classes known as station masters, inspectors, clerks, laborers, and mechanics in shops are not included, they not being under the care of the Amalgamated Society. If the pay of these several classes of railway workers were considered it would bring the general average up to $6.17, which figures are quoted by the Board of Trade as correct for 1906. In this calculation the amount paid for

all overtime is taken into general wage account, which, under the rules governing railway labor, makes a considerable amount. This being deducted the general average of wage is about $5.75 per week for all and every class of labor employed in railway operation and maintenance. The classes not included by the Amalgamated Society number approximately 320,000, and on the basis afforded by its report the wage division shows 134,000 employees receiving $5 or less; 107,000, $5 to $7.50, and 78,000, $7.50 and over.

The Amalgamated Society deals almost exclusively with the men engaged in the traffic department of the railways, and its secretary asserts, in view of the figures before him, that fully 40 per cent of that class receive $5 or less per week as the standard weekly wage. Anything in addition is through overtime, that for the lower grades being small, save in the class of trackmen or "plate layers."

The time schedules differ somewhat in the several countries. Thus, this return shows that in England and Wales nearly all the grades of labor are rated at ten hours per day, except servants about passenger stations, who work twelve hours, but no more. The signalmen (switchmen under the American classification) are on duty an average of nine hours, it having been found most profitable to lighten the tax on body and mind on this class of labor, because of its immense responsibility. Trainmen have nothing whatever to do with entering a switch, except in case of accident, and even then they are practically shut out. Each class is confined to its own duties, with the responsibility fixed beyond all cavil.

LONG HOURS FOR MANY EMPLOYEES.

In Scotland the general rule is twelve hours per day, with a few excepted classes who work at or close to stations. In Ireland there seems to be about an equal division into the ten and twelve hour classes. Few "runs" in the United Kingdom call for much extension in any class of railway labor beyond the ten or twelve hours except through accidental delay beyond ordinary control. Substantially, taking all grades of railway labor, the work may be thus outlined: In Scotland over half the men are rated at twelve hours; not quite half in Ireland; while taking the United Kingdom as a whole one-fourth work twelve hours per day, two-thirds ten hours, while there remain only about 7 per cent who are given the standard eight-hour day. About 60 per cent of the workers are paid standard time for extra time, and where there is a difference allowed it seldom exceeds time and a quarter in the best classes. England and Wales lead by far in extra pay for overtime above the scale. In Sunday work the increase is quite often time and a half, but it is also a fact that fully one-half of the Sunday workers do not receive anything extra for work on that day.

There is a permanency about railway labor, depending upon practical efficiency, which has a great advantage for the worker and which develops in several ways, as time goes on, to his personal benefit. The law promptly fixes the measures of damage that may be claimed for a crippling accident, thus saving any legal expense, the matter being all duly and most practically arranged for the injured employee. Thus he is looked after in several ways not experienced by the worker in the United States. These factors all have their bearing on the wage problem. Comparison of the wages here given with

those paid in the United States for the same grade of work will not be without interest to the student of such problems.

The figures here given are tabulated from the returns of nearly all the railway corporations operating in the United Kingdom, about thirty in all, and may be relied on as correct. Wages are given by the week.

GUARDS OR TRAIN CONDUCTORS.

The guard is one who takes the place of the American conductor on American trains, but the system of train operation is widely different. An English railway guard stands practically in the same position as the chief brakeman on an American passenger train, with considerable added authority, for he signals the train into action and does all that may or would be required of a conductor. He never collects tickets, for that is done either at the passing gate at the end of the journey or by the proper official just before reaching the main station, if the passage is to any great center. Guards practically have a life position as long as they do their duty under the multiplicity of rules governing them, and as a class are the most careful and obliging with which the traveling public comes into contact.

Taking twenty-three roads, the wages paid to guards present these results: First year, per week, $5.25, increasing at an average rate of 24 cents per week for the succeeding years; so that at the end of the twenty-first year the employee may receive as much as $8.12 per week. The general weekly wage average of passenger guards for the United Kingdom in 1907 was $6.50. In addition, however, there is a lodging allowance when away from home of 25 to 60 cents per day, according to the locality and period of absence. The regulation of one leading company reads:

> Day expenses, when on duty away from home, 25 cents; day expenses, including lodging for one night, 60 cents; maximum possible for one week (never paid above) $3.75.

Hours of labor must average ten hours per day, with the time allowances as given for engine men of both classes.

The wages for goods guards—conductors of freight trains, in the American definition—start in, on promotion from brakemen, at $6.25 per week, with a rise of 25 cents per week, and allowances for lodging and meals when absent from home, but always on a limited scale. The average weekly wage for the United Kingdom is $6.64.

BRAKEMEN, SWITCH AND SIGNAL MEN, TICKET MEN, AND PORTERS.

Wages of brakemen are $5.25 to $5.75 per week for the first class, or those who have just been promoted from switchmen; and $5.75 to $7 for the second class, while the maximum pay is reached only after years of service by the advance of 35 cents per week per year. Ten hours per day, or sixty per week, is the rule in England and Wales, and twelve in Scotland. Overtime is paid only at the average rate, with half time additional added for Sunday.

The wages of switchmen per week do not vary much from the brakeman class, but for the United Kingdom they are $6.04 per week; ten hours per day; overtime, one and a quarter, and Sundays, one and a half.

Signalmen are in first, second, and third classes. The weekly pay for sixty hours of the third class is from $5.25 to $5.75, the increase *being by 25* cents per week per year; the second class receives $6 for

a 48-hour week; the first and special class rate, from $6.25 to $7 per week of forty-eight hours. Promotions are made from class to class as vacancies occur. In addition to wages, some of the roads pay a bonus to signalmen ranging from $5 to $25 or $30, according to wages received. This bonus affects the whole class of signalmen, and is in the nature of a recognition of good service rendered.

Ticket collectors receive an average weekly wage for the United Kingdom of $5.36; sixty hours per week; no overtime allowance.

The average wage per week for railway porters in the United Kingdom is $4.36, but there is a rising scale for time service, which never exceeds $5.75 per week. This class is largely benefited by "tips" and "Christmas boxes." Quarter time is given for overtime and Sunday work.

The average wage paid to carriage cleaners in the United Kingdom is $4.58 on a ten-hour basis.

ENGINE DRIVERS, FIREMEN, AND CLEANERS.

Engine drivers start in at $8.25 per week. After one year, with no failure on the man's part, he is given an increase of 75 cents per week, and he may get this annual increase for seven years, until the maximum of $11.68 is reached. This includes drivers on express trains of first class. The average weekly wage of this expert class of workers in the United Kingdom is $9.68, with ten hours per day. There is an allowance of time and a quarter for overtime, but the full sixty hours for the week must be completed before any overtime is credited. Engine drivers are usually divided into four classes.

Firemen are generally started in at not above $5 per week, with sixty hours' labor required per week. They are also grouped in four classes, with the average scale of weekly wage as follows:

First class, $6.50, increasing to	$6.86
Second class, $5.60, increasing to	6.15
Third class, $5.35, increasing to	5.60
Pilot class, $4.50, increasing to	5.25

The highest advance per week of this class is 36 cents in the years following the first. Much depends upon efficiency, as a record is kept of coal consumption and compared with miles run, in which both the driver and fireman figure. The weekly average for the United Kingdom is $6 per week of sixty hours; overtime in the week, after the sixty hours, is one and a quarter time; Sunday, time and a half.

Engine cleaning is one of the few classes of railway labor in which boys are employed, although it is not by any means confined to boys. The minimum age at which boys are employed is 14 years, with a weekly wage running between $1.75 and $3. Where a lad starts in above this age the increase in wage is made possible by from 36 to 48 cents per week. In some companies cleaners, after the requisite probation and approval of work done, are put on piecework, and they receive from 60 to 90 cents per engine, the money paid varying with the size and type of engine cleaned. All overtime is at the regular rate, but time and a quarter is given for Sundays, except in Scotland, where it is time and a half. This occupation is the first step toward gaining the much-desired post of engine driver. Sixty hours a week is required from all weekly scale workers.

GOODS STAFF AND TRACKMEN.

The goods staff may be defined as the station freight handling crew, and there are five different classifications to be named. The wages are the average for the United Kingdom, per week; time of sixty hours; quarter time for all overtime and Sundays; carmen, $5.36; checkers, $6.12; leaders, $5.32; porters, $4.84; miscellaneous staff, "extras," $5.36.

Trackmen are known as "gangers" and "plate layers." They have charge of the roadbed, and are grouped in four different classes. The list includes what are known in the United States as "section foremen," and the wages per week are $5.25 in the fourth class, to $6.25 in the first class. After the first year's service the advance in wages is never more than 25 cents per week in the year.

The plate layers—the men who handle the rails and its belongings—receive a better rate on many of the roads, which varies from a quarter to half time above the ordinary rate of wage. In some cases these special workers are required to provide their own tools—for reasons best known to the management—explained to me as a check against carelessness in the loss of tools.

Compared with other grades of railway labor this class has preferential treatment, especially in the matter of overtime, which in some cases is granted on the double basis, and especially so for all-night work, from 10 p. m. to 6 a. m., but generally extra half time is the rule. Inclement weather and all the accidents of railway operation affect this portion of the wage question. This class is also given a benefit as to time, the summer rule per week being fifty-six and one-half hours, and fifty and one-half hours in winter. The arrangement in summer is ten hours for five days, ending with a half-holiday on Saturday; in winter it is a nine-hour day and the Saturday half-holiday. Not all the railways are on this method, but the great majority of the men employed are considered in this class.

INSPECTORS, LINESMEN, AND MISCELLANEOUS.

There is a general and very rigid inspection made, both of the roadway and of all running material, on all roads, and for this purpose a considerable staff of inspectors or examiners is kept up by all companies. The average wage for this service per week for the United Kingdom is $6.12, though some companies pay more. An average of sixty hours per week is the rule, with overtime at quarter rate. Sunday is on the regular time basis.

The important grade of signal fitters and linesmen, who belong to the class of machine-shop workers, generally work under specially favored conditions. The signal system on all the English railways is most thorough, and it receives a watchful care day and night. The average wages paid per week in the United Kingdom works out at $5.75 to $7.50 per week, owing to the length of time served. The workmen have a fifty-six-hour week, with overtime at one-fourth extra for week days and half time extra for Sundays.

It is not possible to make any special observations as to the great number reported under the heading of "miscellaneous labor." This comprises a varied class, such as boys, cooks, scullions, greasers, etc. The average weekly wage received by them in the United Kingdom *works out* at $5.18 for sixty hours per week, with no allowance for *overtime* or Sunday work.

EMIGRATION OF LABORERS.

GERMANY.

LARGEST NUMBER START FOR UNITED STATES—IMMIGRATION STATISTICS.

According to the statistics recently published by the German Statistical Bureau, and quoted by Consul-General Hugh Pitcairn, of Hamburg, 389,995 persons emigrated from German ports during the year 1907, of whom 363,615 were aliens and 26,380 were German subjects. The consul-general further summarizes:

These figures show that, compared with those for the previous year, 1906, there was only a slight increase in the German emigration (906 persons), whereas considerably more aliens left for extra-European countries, such increase amounting to 37,625 persons. Besides the German subjects emigrating from German ports, 5,316 German emigrants embarked at ports other than German, among whom there were 3,313 at Antwerp and 1,770 at Rotterdam and Amsterdam.

The total number of Germans emigrating from this country was 31,696 in 1907, compared with 31,074 in 1906, of whom over 2,000 each came from the Provinces of Posen, Brandenburg (including the city of Berlin), and Hanover and the Kingdom of Bavaria; over 1,000 each from the Kingdom of Saxony, the Rhine Province, the Provinces of Westphalia, West Prussia, and Schleswig-Holstein, the Kingdom of Wurttemberg and the Grand Duchy of Baden.

According to their occupation, 10,920 of the Germans emigrating in 1907 were farmers and farm laborers, 10,235 had formerly been occupied in mining and industrial, and 4,046 in commercial trading establishments. Of the alien emigrants who left Germany via German ports, 119,352 came from Russia, 112,788 from Hungary, and 110,444 from Austria. The destination of the largest majority of these, and also of said German emigrants, was the United States, to which country 30,431 Germans and 346,871 foreigners emigrated from German ports.

During the year 1907 217,812 persons arrived by sea at German ports from extra-European countries, of whom 151,084 came from North America, 6,059 from South America, 11,222 (including 6,996 German troops) from Africa, 796 from Asia, and 498 from Australia.

JAPAN.

PROPOSED ESTABLISHMENT OF KOREAN COLONIZATION COMPANY.

Consul Wilbur T. Gracey, of Tsingtau, quotes the statement from a newspaper published in China that a bill is to be introduced in the Japanese Diet for the establishment of the Japan-Korea Colonial Company. The concern is to have a capital of $5,000,000 gold, with power to issue debentures to ten times that amount.

The shares will be issued only to Japanese and Koreans, and the directory will be appointed by the Japanese Government. The Government will grant the sum of $150,000 gold annually to the company until it is able to earn a dividend of 8 per cent per annum. The principal object of the company will be to send Japanese peasantry to Korea to cooperate with the natives in the development of agriculture in the peninsula.

CANADA.

ENTRY PROHIBITED OF IMMIGRANTS AIDED BY PUBLIC CHARITY.

Consul-General William Harrison Bradley, of Montreal, advises that an order-in-council has just been passed, which prohibits, on and after April 15, the landing in Canada of any person whose passage has been paid, wholly or in part, by any charitable organization out of public moneys, unless it is shown that the authority in writing of the assistant superintendent of immigration for Canada has been obtained for the immigration of such persons, and been acted on within sixty days.

BRITISH FATAL ACCIDENTS.

NUMBER OF DEATHS FROM CASUALTIES AMONG INDUSTRIAL WORKERS.

Consul-General Robert J. Wynne quotes a London journal as saying that the number of deaths from industrial accidents in the United Kingdom reported in the year 1907 was 4,460, an increase of 341 over the year 1906 and of 277 on the average for the five years 1903–1907. With the exception of quarrying, each group of occupations shows an increase as compared with 1906. These increases were most marked in the shipping and mining groups, the fatalities in these having been 1,363 and 1,273, respectively. In railway employment 487 were killed.

TEXTILES.

SILK MANUFACTURES.

FRANCE.

TRANSFORMATION OF WEAVING INDUSTRY FROM HAND TO POWER LOOMS.

Consul John C. Covert furnishes a translation of a paper entitled "The transformation of weaving in Lyon," recently read at a meeting in that French city by the secretary of the Silk Manufacturers Association, covering the changes in the industry since 1819, from which the following extracts are taken:

The silk industry of Lyon may be classed in three divisions, which operate independently of each other: (1) The manufacturer, who buys the raw material and prepares it for weaving by dyeing or otherwise, has it woven and sells the merchandise; (2) the master weaver, who has the silk woven on hand or steam looms; (3) the dyer and printer, who dyes or prints in the thread or in the piece and delivers the goods to the manufacturer.

During many years these three divisions of manufacture were concentrated in Lyon. Gradually a large part of the hand-loom work passed into the country, this change being caused by the erection of silk mills worked by steam. Hand looms have been distributed in seven neighboring departments. The manufacturer remains in Lyon where the finishing of the silk is done.

In 1888 there were in Lyon 34 silk mills belonging to manufacturers, and 154 belonging to men who worked for silk merchants. To-day there are 36,000 power looms in Lyon, many of which belong to workingmen. To these must be added from 55,000 to 60,000 looms scattered over the country in the neighborhood of Lyon, making nearly 100,000 looms in the district, outside the large silk mills.

EFFORTS TO PROVIDE EMPLOYMENT.

The great object the silk interests of Lyon have been aiming at is to give steady employment to the men and women of Lyon, who have been thrown out of work in the city by the introduction of looms into farm houses and the erection of large silk mills worked by steam or electricity.

In 1881 a number of citizens organized a company for the purpose of furnishing the hand weavers with power looms to be run by steam, a contract being entered into that the weavers should pay a small sum per month for the new apparatus. For various reasons this society dissolved after five years of intelligent and conscientious effort.

In abandoning the project the society expressed the opinion that the purpose it had in view might yet be accomplished, that the causes of failure were not without remedy, and the hope that the hand

loom might, in the course of time, be replaced by a power loom worked in the weaver's family.

One reason for the failure of the introduction of power looms was the aversion of the weavers to abandon the old process. They insisted that the material made by steam was inferior to that made by hand, and some of the large dealers encouraged this opinion. The failure of the experiment seemed fatal to the industry of the weaver. He was compelled to return to the hand loom. Several new, large steam mills were started, and more looms than ever were distributed throughout the country.

NEW PLAN ADOPTED.

By this time the use of electricity had become so common that it was thought possible to furnish the journeyman weaver with a motor power cheaper than steam. A company was organized for this purpose. The weavers had been out of work so long that they cheerfully accepted any plan that offered relief. The men at the head of the movement contracted with users of electricity for their surplus power and obtained the right from the city authorities to run wires into a quarter of the city called the Croix Rousse, the traditional home of the silk weavers.

A contract was made with the weavers that they should pay 10 per cent of their earnings for the new machinery, and electricity was soon employed in throwing, dividing, weaving, and all the work of producing silk. The great electrical works of Lyon furnished electricity for one loom at 75 francs ($14.48) per year, representing a fraction less than 5 cents per day of ten hours. In 1901 there were 500 looms worked by electricity on the Croix Rousse hilltop in Lyon. The silk mill was installed in the family beside the kitchen and bedroom.

As it was known that the weaver lost a great deal of time in going to his employer's store, a telephone was placed in an office convenient to all the weavers that they might communicate with their employers without loss of time.

FAMILY WEAVERS—WORKINGMAN'S CITY PROPOSED.

After an experience of four years the promoters of the new movement reported that a weaver could do as much work on the power loom placed in his apartment as was done on the average loom in a large factory; that power looms were worked in all the rooms of many five and six story buildings without any complaint from landlords or inconvenience to anyone.

The results thus far reached have demonstrated that in spite of the establishment of large mills, where silk is made on a hundred or more power looms, men and women can pursue their work, as of old, in their families without being at the mercy of great aggregations of capital. It is better understood than ever before that the interests of capital and labor can be united and made to work together. The great silk merchants who a few years ago furnished looms to farmers, and whose principal aim was to get their work done, have combined in an effort to furnish steady employment and to prevent the surplus production by factory looms from depriving any part of the people *of work.*

A movement is on foot to build a workingman's city upon the *Croix Rousse* hilltop, where labor will have cheap rents and all the

advantages that accrue from great combinations of capital. It has been demonstrated that the important advantage of power looms can be utilized by the individual families. It is now desired to bring back the looms from the country to the city in order that the people of the city may enjoy steady work, and that the silk industry for which Lyon is famous may enjoy the benefit of the technical knowledge that several generations of work have given to the Lyonnese weavers.

SILK THREAD MARKET.

EXCELLENT MARKET FOR AMERICAN EMBROIDERY AND SEWING SILKS.

Consul Louis Goldschmidt, of Nantes, advises that there seems to be an excellent market in France for American embroidery silks and sewing silks. He gives the following trade particulars:

Although France has been for centuries, and is to-day, in the lead in the manufacture of silk textiles, the market and sale of embroidery silks and sewing silks has not nearly the importance which it occupies in the United States. There are to be found in all the larger, and to a certain extent in the smaller cities, numerous small stores where women's needlework and the material for such are on sale, but the assortment of embroidery silks to be found at such places is very limited, and to one accustomed to the elaborate manner in which such business is done in the United States it seems that the methods here could be much improved.

French women are usually adepts at some kind of needlework, and wonderful specimens of this art are to be seen, particularly when one considers the lack of the proper material to be found on sale, and they would be the first to appreciate a proper assortment of colors and shades which would enable them to produce still more beautiful work.

Another feature which enters into this is that the embroidery silks which are to be found here are not generally washable, and consequently can not be used (except in some shades) on white washable material. This latter point is, in my opinion, the main reason for considering that American embroidery silks can be sold here.

The price of the American article is probably slightly higher than the French article, but if an effort were made by the manufacturers of the United States to show by demonstration the superiority of their silks, excellent results could be obtained.

SEWING SILKS—SALES METHODS.

To a smaller extent sewing silks might be sold here. Sewing silks are usually sold in skeins, and the assortments to be found on sale are also limited in the scale of colors. In the remotest places there is no such thing as the usual display cabinet found in American stores where the sewing silks are properly shown up. Such as are to be found here are usually kept in bundles and tied up each time after a sale is made. Some few silks are sold on spools, which are usually sold only to dressmakers.

Some people may be surprised to learn that American silks could be sold in France in opposition to French goods, but the manufacturer who has enough enterprise to attempt to capture this market, and who goes about it in a proper manner will undoubtedly succeed not only in France but in many other European countries.

It will be entirely useless to attempt to do any business by correspondence and by catalogues. It will require able men who can demonstrate the superiority of the American silks, and who can sell either to the retailer direct or select some few responsible wholesale concerns who could act as distributors. According to the French tariff the import duties on dyed sewing silks in France are 600 francs ($115.80) in the general tariff and 300 francs ($57.90) in the minimum tariff per 100 kilos (220.46 pounds). Imports from the United States pay the rate under the general tariff. The duty on slightly twisted silk for embroidery is 300 francs per 100 kilos, both in the general and minimum tariffs.

Catalogues and color cards, if sent to this consulate will be placed on file for future reference.

[Lists of wholesale and retail mercers, and of retail dealers in women's needlework at Nantes, forwarded by the consul, can be obtained from the Bureau of Manufactures.]

MEXICO.

IMPORTS AT CIUDAD JUAREZ—COMPLAINTS AGAINST AMERICAN GOODS.

Consul Thomas D. Edwards, of Ciudad Juarez, writes that the annual importation of all silk goods into that consular district, as estimated by the local merchants, is about $60,000. He continues:

The kinds and sources of the imports are given as follows: Spool and embroidery silk—the United States; manufactured silk goods—France, Germany and Japan; silk underwear, hosiery, knit goods, and some piece goods—Germany; shawls, ties, ribbons and the greater portion of the piece goods—France; handkerchiefs and silk-embroidered goods—Japan. The "rebozo," a small shawl of various colors and patterns, often heavily fringed, worn over the head by women of all classes, is an important article in the silk trade.

The duty on spool silk and embroidery silk is $6.60, Mexican money, per kilo (kilo = 2.2 pounds); manufactured goods of pure silk, $17.50 per kilo; and manufactured goods of silk mixed with cotton or wool, $8.25 per kilo.

Complaints against American silk manufacturers are that they produce wholly for a home trade and wish to dispose of the overflow here, regardless of the peculiar needs of the country resulting from its climate and customs. The manufacturers of other countries, on the other hand, make for Mexico what is wanted here. Another source of complaint is that American purchases come packed in boxes of soft lumber of an inferior quality, often only one-half inch in thickness; whereas, the foreign boxes are of inch timber of good quality, generally strapped with iron, and provided with an oil-paper lining.

ITALY.

GENERAL TRADE IN THE VARIOUS PRODUCTS SHOWS AN INCREASE.

Consul James E. Dunning, of Milan, supplies the following statistics of the silk trade of Italy for the first ten months of 1907:

The imports aggregated in value $32,376,130, a gain over the 1906 *period of* $2,822,969. The largest importations were $12,431,091 of

Asiatic raw silk, $7,967,561, of dried cocoons, and $4,604,980 of European raw silk. Italy's silk exportations for the first ten months of 1907 amounted to $98,567,322, an advance of $13,938,554 over the 1906 period. The exports of European raw silk reached $45,227,311; of raw silk, doubled and twisted, $29,287,364; of plush, $10,757,717; of dyed goods, $2,699,482; of waste, $2,698,570; of spun silk, $3,732,466; of mixed textiles, $1,466,748; and of silk ribbons and cord, $1,053,915.

FLAX PRODUCTION.

ST. HELENA.

HOW TO SECURE A SUCCESSFUL START IN THE INDUSTRY.

The following report has been prepared by Consul Robert P. Pooley, of Jamestown, St. Helena, for the information of those who might be interested in the establishment of the phormium (New Zealand flax) industry in the United States:

For a successful start in the phormium industry the services of a New Zealand expert should be secured. Plants should be raised from suckers, planted 6 feet apart, 1,250 to the acre, clear of trees. Plants grown under trees look as good as others, but the fiber is weak. Plenty of sun is necessary. The plants must be fenced against cattle and goats, but sheep do not eat the leaves. Growing from seed is a tedious process, as the young seedlings, being very delicate, require constant care lest they be soon destroyed by grubs.

It is hardly possible to calculate the acreage under phormium in St. Helena. With the exception of about 300 acres planted with suckers in the last two years the plants in the island have existed for the last thirty years. There are probably sufficient mature leaves to supply the government mill, which consumes from 90 to 100 tons monthly, for three or four years, the object being to make this available supply last until the suckers put down last year are fit for reaping. Leaves, under favorable conditions, are ready for reaping four years from the planting of the suckers. In three and one-half years there will be sufficient phormium in St. Helena to supply three mills.

A 15-acre drying and bleaching grass field adjoining the mill is necessary. About 35,000 gallons of water, running through the mill, are used daily, as thorough washing, drying, and bleaching are essential to obtain good fiber. [Further details of the St. Helena government mill machinery equipment are contained in the report, which may be consulted at the Bureau of Manufactures.]

BELGIUM.

CONFERENCE OF MANUFACTURERS OVER BUSINESS CRISIS.

Consul W. P. Atwell advises that in the general assembly of the Association of Flax Spinners and Weavers in East and West Flanders, which was held in Ghent on March 14, the present crisis in this industry was the principle subject of discussion, which he reviews as follows:

It was agreed that these industries, considered as the most important in East and West Flanders, are now experiencing a state

of affairs looked upon as being one of the most critical ever gone through. Business has almost come to a standstill. The principal cause is attributed to the recent financial crisis in the United States, as orders from America are exceedingly scarce, and orders previously placed are being canceled. Nearly all the mills are working on short time, with a view to decreasing production and the accumulation of stocks. It is already foreseen that if the present situation does not change in a short time the greater number of the mills will be obliged to shut down.

An important factor in the condition of these industries is the increase of salary of 10 per cent which was given to the workmen last year, when conditions in these industries were exceedingly flourishing and profits large. Efforts are now being made to decrease wages 10 per cent.

COTTON INDUSTRY.

JAPAN.

CHINESE MARKET CHANGES AFFECT YARN MILLS IN OSAKA DISTRICT.

Vice-Consul Walter Gassett, in the following report from Kobe, dated March 4, reviews the cotton-yarn market in the Far East, and the Japanese manufacturers' efforts to tide over the trade depression:

Since the spring of 1907 silver, which by way of reaction from a violent temporary appreciation had entered a gradually downward grade, toward the end of the year began to fall lower and lower, owing to the failure of the crops in India and to the suspension of purchases of the white metal by the government of that country.

The consequence has been that Japanese trade with China has been very adversely affected, more especially in the exports of yarn, which are now nearly at a standstill. The sale of yarn in Japan has also fallen off since the beginning of the year, and if the depression should continue, the effect will soon be felt in a decreased importation of American cotton to Japan.

While the present depression in yarn export is chiefly due to the decline in silver, in some measure it may be due also to the activity of Indian yarn now found on the Chinese market.

The cost of the production of yarn based upon the present market value of raw cotton, taking the value of the mixed cotton used for a bale at $52.50 United States gold, is calculated at about $62.50 for 20 counts good grade, including spinning expenses, while the price per bale in the Osaka yarn exchange is at present only $58.50 good and $54.75 medium grade.

SALE PRICES LESS THAN COST.

The Shanghai yarn market at present stands at 95 taels for 20 counts medium, or about $56.85 United States gold, and when the freight (50 cents), insurance (15 cents), and customs duty, etc. ($2.50), $3.15 in all, are deducted, the price realized is $53.70, or a loss of about $1.05 per bale on shipments.

The season for the import of raw cotton is now at its height, and with the godowns of spinning mills full of yarn there is no room for the raw material. The bonded warehouses of Kobe are congested

with this form of merchandise, and new importations now rapidly arriving have to be sent on to Osaka for storage.

At the present rates spinning companies are making no profit and are possibly incurring loss. Moreover, in view of the generally unfavorable financial situation, bankers are hesitating to make advances on bills. In these circumstances spinning companies are reduced to a trying position, and it is believed that reserves may have to be called upon to pay dividends. Unless a marked change in the situation occurs within the next few months, the dividends paid by spinning companies will show a heavy decline, those that were able to pay a dividend of 30 per cent last year not being expected to pay more than 10 to 15 per cent this year.

METHODS FOR RELIEF.

In the endeavor to relieve the yarn market, the Japan Cotton Spinning Association, finding that the restriction of output has no effect, now proposes that the cotton spinning companies should encourage export by granting a bounty or bonus on all yarn exported. This proposal has been approved by the committee of the association, and their first idea was that purchasers of Japanese yarn in Shanghai should be entitled to tickets according to the amount of their purchases, the possession of which would enable them to participate in a lottery for money prizes. Payment of the prizes in money having been objected to, however, by the Shanghai consular body, the association has decided to award them in yarn.

The drawings are to take place every second month in Shanghai, and the prizes offered will amount to $50,000, divided into 2,243 prizes of various sizes, from the first of $10,000 down to $10. The money for this scheme is to be raised by a fund subscribed among spinning mills. The agreement is that each mill in the association which produces coarse yarn valued at 20 counts and above shall contribute 25 cents toward the prize fund on each bale produced and 12½ cents more on each bale exported. This scheme is to be put in force for one year.

MOROCCO.

NONPARTICIPATION OF AMERICAN COTTON GOODS MANUFACTURERS.

Consul-General Hoffman Philip, of Tangier, states that in view of the continued nonparticipation of American manufacturers in the extensive and growing cotton-goods trade of Morocco, in which he sees no reason why they should not compete to great advantage, it seems desirable that exporters be furnished with certain detailed information which might be difficult for them individually to secure. He says further:

This consulate-general has frequently called attention, by means of public reports and answers to commercial inquiries, to the value of Morocco as a field for the development of an American trade in cotton goods. This trade constitutes probably the most valuable and unchangeable branch of commercial imports of this country; but up to the present little real attention has been given to the matter by American firms.

Vice-Consul-General G. E. Holt, of this place, has prepared the following statement on the sale of English cottons, together with a

number of samples of cotton goods largely sold in Morocco, with detailed information as to prices, etc., which would seem to furnish information of an advantageous nature to American exporters:

As an aid to any American exporter who desires to attempt competition with English cotton-goods exporters, who alone annually sell $4,000,000 worth of goods in Morocco, there are forwarded herewith a number of samples of English goods such as are generally and largely sold in the Moroccan market, together with details as to their widths, lengths, and cost. [These may be secured from the Bureau of Manufactures.] Terms allowed on these goods are 6 months' time with interest at 5 per cent from day of shipment; purchaser pays freight, which amounts to 3 to 3½ per cent of invoices. In case of variation in price of goods from the preceding invoice, the change is noted on the accompanying statement, this sometimes resulting in a debit and sometimes a credit. A Tangier merchant of good standing is allowed to carry a $2,000 credit on this basis with a leading Manchester cotton-goods firm.

CHINA.

EFFORTS TO EXTEND COTTON CULTURE IN THE PROVINCE OF CHIHLI.

Consul Wilbur T. Gracey, of Tsingtau, transmits the following information from a local newspaper regarding the Government interest in the cotton industry in China:

A court order sent to the Viceroy of Chihli Province commands all viceroys and governors to encourage the people to cultivate cotton. "The demand for cotton goods and yarn increases year by year in China," says the order, "and large quantities have to be imported. There are several provinces in which cotton can be grown well, and the Board of Agriculture and Commerce has been directed to dispatch officials to the United States and other countries to study the weaving industry and draw up regulations for the cultivation of cotton in all districts where it can be advantageously grown.

"The Comptroller-General of Customs has also been directed to draft regulations granting native-grown cotton special privileges in transit, so as to encourage the home industry. This industry is of the utmost importance to Chinese interests, and viceroys and governors must induce the Chinese to promote companies and further the cotton industry in every way." The Viceroy of Chihli has directed the officials to make a detailed report of all cotton grown in Peiyang, stating in what manner they believe the cultivation might be improved.

ARGENTINA.

COMBINATION OF LOCAL FACTORIES—CROP STATISTICS.

According to the French consul at Buenos Aires the three small cotton manufacturing companies of Argentina have combined as the Sociedad Hilanderias Argentinas de Algodon, capitalized at about $875,000. This concern uses native cotton entirely, the consumption having been 400 tons per year, but the contracts for the present year call for an increase. The 1907 crop of cotton in Argentina is given as 7,000 metric tons, equal to about 3,300 bales of 500 pounds each. The total area in cotton culture is 4,644 hectares (11,475 acres), chiefly distributed as follows: Chaco, 3,280 hectares; Formosa, 111; Misiones, 68; Corrientes, 495; Santa Fe, 275; Catamarca, 22; and La Rioja, 215. The cotton seed of the Chaco district is sold to the Colonelli cotton factory, which is the only one equipped for the manufacture of oil.

BRITISH LINEN TRADE.

IRELAND.

YARN MANUFACTURERS AGREE UPON A MINIMUM LIST OF PRICES.

Consul Samuel S. Knabenshue writes from Belfast under date of April 2 that an agreement has just been reached among the linen spinning firms of Ireland, whereby they pledge themselves not to sell below these minimum prices:

Ordinary line wefts, 5s. ($1.22) per bundle; ordinary tow wefts, 6s. ($1.46) per bundle. This agreement is to remain in force until December 31 next. It has been signed by firms representing 800,000 spindles, out of a total of about 910,000 in Ireland, while several firms which declined to bind themselves by signature are understood to be in entire harmony with the agreement, and will act accordingly. The top prices for yarns, before the decline set in last fall, were 7s. 3d. ($1.76) per bundle for line wefts, and 8s. ($1.95) for tow wefts.

It is stated that this agreement was entered into primarily to protect dealers, who have heavy stocks of yarns on hand, or contracted for at considerably higher figures than the minimum prices now fixed. As it is, they will lose heavily on stocks already purchased, and it is hoped this arrangement will prevent still heavier losses. It is deemed inevitable that there must be a considerable fall in prices, and this agreement is simply to substitute a gradual decline for a threatened sudden slump.

SCOTLAND.

MANUFACTURERS ARE EXPERIENCING A SERIOUS TRADE DECLINE.

Reporting from Dunfermline Consul Maxwell Blake says that it is questionable whether the quarterly statistics have ever shown such a large falling off in exports to the United States from that Scotch district as during the three months ended March 31, 1908, the total decrease in exports of linens alone amounting to nearly $200,000. The consul's particulars follow:

This depression is due to a combination of local industrial, no less than the foreign financially unsettled conditions prevailing throughout the United States, where perhaps fully two-thirds of the total output of this district is consumed.

The spinners of Ireland, in an effort to check the recent slump in the yarn market a short time ago, combined to maintain fixed prices until December 31, 1908, but this does not seem to be a quieting economic experiment, as, while contracts may be written at the prices fixed by the spinners, the buyer feels himself without assurance that a rebate may not be given, varying according to the actual fluctuation of the price of yarn at the time of contract, to all those who later may be fortunate enough to have the advantage of the market on their side on the day of purchase. Thus the combination, so far at least, is ineffective, and does not seem likely to produce the results anticipated.

Most of the yarn now being delivered to local manufacturers was contracted for during last year when there was a widespread fear

that the spinning power of the Irish mills would prove inadequate to the demand created by the speculative tendencies of some of the merchant class who handle the yarns, and thus, as a result, prices went soaring. Coexistent with the late financial troubles, when speculative credit was everywhere impaired, the yarn market suddenly collapsed, taking such a downward tendency within the short space of a few weeks that the same quality of yarn that sold three months ago for 7s. to 7s. 6d. ($1.70 to $1.82) per bundle, can now be purchased as low as 4s. 6d. ($1.09) per bundle.

FACTORY LOSSES—ORDER CANCELLATIONS—THE OUTLOOK.

This means that the manufacturers who contracted at these top prices are losing 3s. (73 cents) on every bundle of yarn delivered, as well as losses on stock on hand of from 20 to 30 per cent. Eight out of the 10 factories in this district are already working on forty hours per week instead of the regular fifty-five hours, while not more than 6,000 out of a total of 10,000 looms are in operation.

American buyers, on account of a slack home demand, as well as because of anxiety over the disturbed condition of the yarn market, are placing no new orders, and in some cases, although I am glad to say it is not general, they are even attempting to cancel orders placed during last year, about which there is much bitter complaint, as the manufacturer was then purchasing materials, sometimes against his own wishes, simply to meet the demands of his customer.

The declining tendency of wet-spun yarns is said in some quarters to hamper the business in the fine damask fabrics, as the dry-spun yarns have several times shown a tendency to recover, but the whole market is weak to the point of even further depression, and, as the price of wet and dry spun yarns have always been interdependent, the whole market is bound to go up or down together. At the present time there appear no local indications of improvement in the situation, as practically everything must depend upon the activity of the American buyer, who now not only has his home market to consider, but the additional responsibilities of a fluctuating yarn market.

TURKS ISLANDS HEMP.

OUTPUT OF THE INDUSTRY—EXPORTS TO THE UNITED STATES.

Consul J. A. Howells reports that the drought of 1907 reduced the output of sisal hemp in Turks Islands, West Indies, fully one-third. The amount exported to the United States was 390,107 pounds, worth $27,593, in 1905; 356,721 pounds, worth $24,769, in 1906; and 213,119 pounds, worth $14,587, in 1907. The exports to the United Kingdom amounted to $651 and $2,207 in 1905 and 1906, respectively.

METALS AND MINERALS.

THE WORLD'S MINES.

BOLIVIA.

RICH TIN AND COPPER FIELDS—MARKET FOR MACHINERY AND EXPLOSIVES.

Special Agent Charles M. Pepper, writing from Oruro, Bolivia, on March 2, tells of the development of mining in that country and of the outlook both for the products of the mines and for the sale of machinery, as follows:

Bolivian purchases of mining machinery depend on the development of the tin, silver, copper, and gold mines about in the order named. The introduction of modern machinery is likely to be the sequel of the railway building which is now going on, since this will reduce freight charges and make accessible regions that heretofore have worked the mines after the old methods and with limited means on account of the high cost of transportation.

The tin mines are likely to furnish the best market. The Bolivian production for 1907 was approximately 16,000 tons of pure tin, slightly less than for the previous year. Substantially all the shipments are in the form of barilla or concentrates. These are calculated on the basis of an average of 60 per cent of pure metal in the ton of concentrates, and the Government export tax is levied on that basis.

EFFECTS OF PRICE FLUCTUATIONS ON THE INDUSTRY.

The average price for 1907 was £97 (English) ($472) for the concentrates, or £173 ($841.90) for the metal. The values are fixed according to the London quotations for the Malay Straits product. When the price soared to £200, or $973.30 per ton, all the Bolivian mines were active and many new ones were opened up in the expectation that the boom would continue. The drop in the price of the metal naturally caused most of the new enterprises to be suspended, while a large number of the small mines also shut down temporarily. These were mines employing from 80 to 100 workingmen and possessing only the crudest facilities. The majority of the larger mines were able to keep going by averaging up the high profits of the preceding two years, but in view of the general depression it is not likely that Bolivia this year will come within 20 or 25 per cent of its tin production during 1906 and 1907. There is agreement in the opinion that with the London quotations averaging £140 per long ton, or $681.31, practically all the Bolivian mines can be operated profitably. Many of them, however, can continue their output at £130 ($632.64), though there is some reluctance to make this admission. [The London quotations in April were above £140 per ton.—B. of M.]

INCREASED PRODUCTION—LITTLE SMELTING.

When it is recalled that in 1900 Bolivia was producing only 6,000 tons of tin as against 16,000 tons in 1907, some measure may be had of the future development and the market for machinery that will be opened up. The bulk of the output is in the departments of Oruro and Potosi, all of which is shipped over the railway line to Antofagasta on the coast. The Huayani-Potosi and the Milluni and other mines in the La Paz district have about 8 per cent of the production, which is shipped by Lake Titicaca and Mollendo.

A few of the richest mines, notably those in the neighborhood of Oruro, where the tin exists in combination with the silver, employ a crude smelting process and are able to ship the tin in bars, but generally the very high cost of fuel and other conditions make the shipment of the concentrates cheaper than to undertake the smelting of the ore, so that manufacturers can depend on the demand in the future being along the same lines as at present. Up to this time most of the stamps and tables for the concentrators and other machinery have been imported from Europe. Perhaps the chief reason for this is that until quite recently there have been no American interests in Bolivia. English, Chilean, and German ownership of the tin mines has obtained and the purchases have been made largely through London and Hamburg. The head offices of some of the largest mines, though owned by Bolivians and Chileans, are in London.

GERMAN MINING MACHINERY UNSATISFACTORY.

Germany has sold large quantities of mining machinery because it had control of Bolivian commerce in all lines. These sales were not due to superior quality or to cheapness. It is almost the universal testimony that German installation for the tin mines has been unsatisfactory. One large mine owner told me that he would like to throw out the German installation entirely, but that neither he nor other mine owners could afford to "scrap" their machinery by wholesale, and they would have to continue working along and gradually replacing the German machines with those from America. His initial purchases in the United States had been satisfactory. However, some preference is shown for the English make as being more solid. There is the possibility of a sharp competition between England, the United States, and Germany, the German agents promising to supply better material, such as that from the Krupp Works at Essen. The works at Creusot, France, also have local representatives, but they are not represented by actual installations in many of the mines. In the laboratories for metallurgical work the chemists and mining engineers give the preference to France. One reason is because the French packing is almost perfect. Laboratory supplies from the United States usually come smashed to pieces.

UNITED STATES INVESTORS WILLING TO BUY.

During the last two years various mining experts from the United States have made investigations of the Bolivian tin deposits and of the mines in operation. It is quite well understood that the tin-plate interests of Pittsburg and elsewhere would like to secure control of the output of some of the leading mines, but nothing seems to have *been accomplished* in this direction yet. Other American interests,

some of them with rather limited capital, have undertaken the development of tin mines on their own account. One of these was compelled to suspend operations in October on account of the financial crisis in the United States. However, the bulk of its machinery, all of which was bought in the United States, had been shipped, and that which had not reached the mines is now stored at Lake Titicaca. The suspension of development operations by this company is not likely to be more than temporary. Another company, composed of Pennsylvania capitalists, has continued operations. The local representative of this enterprise told me that a recent purchase of 220 tons of machinery was made in England, though he would have preferred buying it in the United States. But his experience with bad packing by American manufacturers had combined with other causes to give the order to the English mills.

The American capitalists who are building the Bolivian railways have also mining concessions, but it is not understood to be their intention to have the railway company engage in tin mining or other mining. It is more likely that some of them will invest in the mining business as individuals, while the policy of the railway company will also be to encourage other companies or individuals to engage in mining in order to furnish the railroad with freight. Out of this policy there is likely to grow a number of American mining interests, which will buy machinery in the United States, provided the objections as to bad packing are removed. It may be taken as certain that, while there is no boom in prospect, Bolivian tin mines during the next few years are going to be developed on a scale which will call for large quantities of machinery.

SILVER AND COPPER MINING.

The increase in silver mining is dependent on the railway line from Oruro to Potosi, which now seems assured, since the American and the English interests are harmonizing their differences. Potosi is the most extensive silver-mining region of Bolivia, but the lack of transportation facilities has made it impossible to introduce new machinery, and without this, and the application of modern processes, it has been shown that the Potosi mines, with a few exceptions, can not be worked satisfactorily. The Huanchaca mines, near Uyuni, which for many years were among the most profitable in South America, are in full operation and are supplied with modern machinery. Recently the resumption of dividends, which were suspended when the mines were flooded some years ago, was declared.

The output of the Corocoro copper mines is not expected to be seriously diminished on account of the fall in the price of that metal, since most of those in operation were able to continue in spite of the depression. New development, however, was halted. The Corocoro fields are agreed by experts to be very rich, but their development on a large scale has not been attempted heretofore because the efforts to combine them have failed. Promoters from the United States at various times have obtained options on these mines, but have not secured the capital necessary to take up the options. The capitalists in the United States whom they have approached have invariably declared the price too high. It is possible, however, that in time the negotiation will succeed and the exploitation of the Corocoro copper be

undertaken on a large scale, insuring heavy purchases of machinery. At present the disposition is to await the building of the railway line from Arica, which will insure a short railway route to the coast and effect an important saving in freights.

THE OUTLOOK FOR MACHINERY—EXPLOSIVES BOUGHT IN EUROPE.

There is not much prospect of immediate sales of dredging machinery for Bolivian gold mines. Several years ago dredges were installed in the San Juan River bed in the south. The cost of the installation was very high, since the machinery had to be transported by mules for 200 miles over difficult mountain passes. Now, the railway, which extends from Buenos Aires to the border of Bolivia, removes this difficulty, but the dredging itself has not been successful enough to encourage further importations of machinery. In the Tipuani River region in northern Bolivia gold is abundant, but the transportation of dredging machinery is entirely impracticable, and the Tipuani is likely to be left to the primitive methods of placer mining.

A point which should have attention in connection with mining machinery is the large quantity of explosives which are consumed in Bolivia. These are procured almost entirely from Europe, Germany having the lead. It is not very flattering for American manufacturers of explosives to learn that the bad name they were given some years ago by one company which dumped a lot of inferior dynamite on the South American market has not yet been overcome.

In concluding this brief report I would state that Bolivian mining resources, both from the point of view of the manufacturers of machinery and from that of capitalists, are worthy of the most careful investigation, for the country is one of the world's greatest mineral regions. Until railway communication could be obtained many of the districts, notwithstanding the richness of their deposits, could not be expected to command capital because of the prohibitive cost of transportation both for machinery and for ores. That difficulty is now being removed, and with the extension of the railway system a continuous mining development may be looked for.

AUSTRALIA.

LARGE YIELD OF VALUABLE METALS IN TASMANIA FOR THE PAST YEAR.

Mr. John R. Carter, secretary of the American Embassy at London, forwards the following statement of the secretary for mines at Hobart, showing the quantity and value of mineral products for the Australian State of Tasmania during the calendar year 1907 (£1=$4.86):

Mineral.	Quantity.	Value.	Mineral.	Quantity.	Value.
Gold [a] ....ozs..	65,354.252	£277,607	Iron ore ....tons..	3,000	£1,150
Silver-lead ....tons..	89,762¼	572,560	Coal ....do...	58,891	50,057
Blister copper [b] ....do...	8,247	832,691	Wolfram ....do...	40¾	4,411
Copper and copper ore, tons	788¼	36,975	Bismuth ....cwt..	3¼	27
Tin ore....tons..	4,342¾	501,681	Total....	....	2,277,159

[a] Fine gold, including gold contained in blister copper and silver-lead bullion.
[b] Value of gold contents deducted.

AUSTRALIAN KEROSENE SHALE.

PREPARATION BEING MADE TO WORK THE NEW SOUTH WALES DEPOSITS.

Consul Orlando H. Baker, of Sydney, reporting on the efforts now being made to work the shale deposits of New South Wales, says that their inaccessibility has heretofore rendered such efforts unprofitable:

The deposit of kerosene shale, about 120 miles west of Sydney, is said to be the largest in the world. There is a stream called the Wolgan River, in the valley of which, and adjoining which, most of these deposits are found. They are estimated to cover 41 square miles; depth of seam varying from a few inches to 6 feet. The richest shale is at the Joaja mine, 77 miles from Sydney, said to yield 130 gallons of crude oil per ton, or 15,400 cubic feet of gas, with an illuminating power of 48 sperm candles. Some of this shale has averaged as high as 160 gallons of crude oil per ton.

A company recently formed has erected plant and works and built a railway to connect the shale fields with the Western Line, thereby opening up a large tract of country. Besides shale, there are valuable deposits of coal, clay, and ironstone on the company's ground. The land is well timbered, and should in the future attract a considerable population.

GAS AND OIL SHALE—DEVELOPMENT PLANS.

The shale occurs in layers of two qualities—the first and richer is used for gas making, while oil is extracted from the second. The primary object of the company is the conversion of this retorting quality of shale into oil, and the refining of its other products. Scotch shale yields by distillation, at the most, about 30 gallons of oil a ton, while about two-thirds of its weight consists of residual mineral matter. As a result of careful tests and analyses, it has been found that Wolgan shale contains only 15 to 30 per cent of mineral residue; it yields by distillation rarely less than 80 gallons of oil a ton, while large sections give from 130 to 150 gallons. Moreover, the quality of the Wolgan oil appears to be superior to that of any other got from shale. There exist in the company's property a proved 20,000,000 tons, and in addition an assumable 30,000,000 tons of shale, which is to say, about 60,000,000 barrels of oil. This oil the company proposes to extract at the rate of from 10,000,000 to 12,000,000 gallons a year. Like crude petroleum, this crude shale oil yields not only oil for gas-making purposes, but motor spirit, illuminating oil, lubricating oil, paraffin wax, and other products. The annual amount mentioned would yield, among other substances, about 3,000,000 gallons of kerosene.

The richer, or gas-making shale, appears to be as superior for gas purposes as the other is for oil. One gas company has, in fact, already taken 10,000 tons of it from the company within a year. It gives the exceptionally large amount of over 17,000 cubic feet of gas a ton, and is, therefore of more value for gas-making purposes than cannel coal or any other product.

The company's retorts and refineries are not yet finished, but that is only a question of time. The coal seam which is being developed in the same district is now yielding 400 tons a day. This coal is

very even in quality and produces a high class of coke, of which the ash averages less than 10 per cent and which does not contain more than one-half per cent of sulphur. There is at present a very large demand for coke, and this, as well as the oils, will be exported in increasing quantities.

The Wolgan-Capertee district is likely to turn out one of the most valuable in New South Wales, perhaps in the Commonwealth. The State government has offered to convey specimens of the oils, candles, etc., from the shale products to the approaching Franco-British exhibition and to give them a place in the New South Wales section.

GERMAN KIESELGUHR.

DEPOSITS, COMPOSITION, AND TREATMENT OF INFUSORIAL EARTH.

Consul Robert J. Thompson, of Hanover, makes the following report on kieselguhr, also called "shell flour," "hill flour," and "infusorial earth," found in Germany and elsewhere in Europe, and which is composed of an accumulation of shells of diatomea, consisting of pure silicic acid:

This earth or clay is found in considerable quantities in this consular district. It is a light, flourlike mass, gray, brownish, or light green; feels dry and soft to the touch, crunches between the teeth, absorbs water, can not be melted or burned, and in ordinary temperature resists chemical action. Kieselguhr is found in layers in alluvial soil or in the vicinity of lignite deposits. Large quantities exist in this district, especially near Huetzel in the Lueneberger Heide, and also near Unterluess in the same neighborhood. The kieselguhr extracted at Huetzel is dried only in the open air. It is whitish gray, white, black, green, or blue, and when dried is used for various purposes. It is generally cleaned before being used. Kieselguhr, or infusorial earth, is also found near Vogelsberg in Hessen, at Jastrabe in Hungary, near Franzensbad in Bohemia, in Tuscany, Sweden, Finland, and also in the Weichsel Valley. That found in the last-named locality is yellowish white, and may be cut out easily with a spade.

Following is an analysis of kieselguhr found in the Lueneberger Heide in this consular district:

Constituents.	White kiesel-guhr.	Green kiesel-guhr.	Constituents.	White kiesel-guhr.	Green kiesel-guhr.
	Per ct.	*Per ct.*		*Per ct.*	*Per ct.*
Water, general loss and organic substances	0.2	15.0	Lime	0.2	0.3
Protoxide of iron	1.0	2.0	Magnesia	.3	.4
Clay	1.0	1.9	Silicid earth	97.3	79.8
			Phosphoric acid	0.0	Trace.

The deposits are found very near the surface of the earth, about 1 to 3 feet deep. When prepared it is used principally for building and insulating purposes. It is practically weatherproof, that is, it is not affected by heat or cold, by dryness or moisture.

METHODS OF HANDLING THE PRODUCT.

The raw material is mixed with cement asphalt or other substance *of pliable* and hardening character (the proportions being held closely *as trade* secrets of the manufacturers) and pressed into slabs, blocks,

etc. In the manufacture of explosives, while kieselguhr is employed to considerable extent, it is quite dangerous, owing to the fact that it does not form a cohesive mass, the small particles being apt to roll or move about on the slightest disturbance, causing explosions.

There is very little machinery used in the preparation and treating of kieselguhr for the market, and such as may be purchased is of the simplest character. It is extracted from the earth like cohesive sand or clay, and then dried, generally in the open air. Reducing, mixing, and cleaning mills, similar to those employed for the manufacture of brick, are used. These are really grinding machines. They are calculated for both a coarse and fine product; the coarser mixture being utilized for artificial stone, slabs, mortar, padding, etc., and the finer for artificial marble, and working up in canvas, asbestos, and rope for wrapping pipes and wires for insulating purposes.

The grinding machines referred to may be obtained from a German manufacturer [whose illustrated catalogue is on file at the Bureau of Manufactures, from whom the address may also be obtained of the makers of a machine making kieselguhr twine and rope].

Such special machines as may be used for drying and forming kieselguhr are necessarily simple. They are, however, the secrets and for the most part the inventions of the factories using them, and as these manufacturers are few in number they have apparently found it advantageous, at least such is their policy, to withhold their methods from the public and retain them solely for their own use. There are no technical books or publications on kieselguhr.

EXTRACTION AND PREPARATION.

DETAILS OF INDUSTRIAL HANDLING OF THE ARTICLE.

Consul-General Hugh Pitcairn, writing from Hamburg, submits further facts on the German infusorial earth industry, as follows:

Kieselguhr is a very light, mealy substance consisting of 90 per cent of silicic acid, which is quarried in several parts of Germany, chiefly at Unterluess, in the Province of Hanover. The kieselguhr syndicate there consists of five pits. Besides, there are kieselguhr pits near Soltau, Hanover, along the upper Rhine, at Bautzen, Saxony, and near Giessen, Hessen.

Kieselguhr is not mined, the pits from which it is quarried not being deeper than about fifty feet.

The principal characteristics of kieselguhr, or infusorial earth, are the low specific weight it has, which is 0.250 to 0.550, the high absorbtion—75 to 82 per cent, i. e. up to four times its own weight—and its quality of being a very bad conductor of heat, making it one of the most reliable means of protection against radiation of heat.

The mode of extraction of kieselguhr is similar to that of clay for the manufacture of bricks. The product is removed from the open pit by means of lowries; it is then spread upon benches or hillsides, for the purpose of drying by air and sun.

Artificial drying processes, by means of hot air, in rooms, drums, or troughs, have not proved practical. Kieselguhr roasts easily, but must never be brought into touch with a flame, as it would soon calcinate. The drying of kieselguhr in ovens would not be profitable, and such process could never come into consideration in large kiesel-

guhr concerns. Several processes of drying kieselguhr by using mechanical means—particularly in revolving drums, also with the American Cummer system—have been tried in Germany during the last twenty years, but have not proved satisfactory, and have therefore all been discarded.

Kieselguhr has also been dried by means of hot air and exhausters, but this process is one applied only during wet weather, in exceptional cases, and with kieselguhr that had already been dried to a certain extent. This process, however, is not remunerative, and can only be applied with the best quality of kieselguhr—washed for the manufacture of dynamite—and at a time when the market for kieselguhr is at a high level.

It has to be taken into consideration that kieselguhr contains, as it is extracted, 70 to 90 per cent of water, which evaporates very slowly. Air-dried kieselguhr still contains 15 to 25 per cent of water. After having been dried kieselguhr is ground and packed in single or double sacks. During transportation special care must be taken to protect the product against moisture.

For crushing mills there are four different systems in use in Germany, with up to 7,500 revolutions per minute. A special system for such mills can not be recommended, as the respective condition of the kieselguhr must be taken into consideration. For instance, American kieselguhr is considerably harder and more brittle than the famous Hanover kieselguhr. Canada kieselguhr has an entirely different structure, and must therefore be treated in another manner than Florida kieselguhr.

The raw, ground kieselguhr is used as insulating material for boilers, engines, pipes, walls, stoves, etc., either raw or prepared, as composition, in bricks or plates. Kieselguhr is further used as filling material for soap, sealing wax, paints and colors, polishing pomatum, and for the manufacture of dynamite, cosmetic powders, and filters, also as filtering material in chemical factories, as no kieselguhr is absolutely inorganic.

Kieselguhr is washed by simple mechanical means in a tossing keeve, then deposited in large receptacles and dried in drying sheds. Finally it is pulverized.

CALCINATION RESULTS—VEGETABLE SUBSTANCES.

Hard, or so-called green, slaty kieselguhr is calcinated, not burnt. This natural process is chiefly caused by the free phosphorous and sulphur contained therein, as well as by organic substances, chiefly vegetable residuum. Therefore, ovens are not required for the calcination of kieselguhr, which can be done in the open air or in ordinary sheds protected against rain. According to its respective chemical composition, kieselguhr calcinates red, pink, dark, light, or white.

Certain kinds of kieselguhr contain 10 to 20 per cent of sand in their natural, raw state. These can be well used as insulating materials. For dynamite, cosmetic powders, filters, and polishing materials the sand must be carefully removed by washing. Special care must be taken for the removal of the fine quicksand.

Vegetable substances can not be removed by washing, but only by the calcinating process. The more carefully this is done, the higher

will be the capacity of absorption, particularly with the hard American kieselguhr, for which double draft of air must be used to effect thorough calcination.

USES OF THE PRODUCT.

SUPPLY OF RAW MATERIAL AND MANUFACTURED ARTICLES.

Consul Thomas H. Norton, of Chemnitz, furnishes the following additional information concerning the deposits of infusorial earth and the articles manufactured therefrom:

The use of kieselguhr in Germany is now very extensive. Large amounts are employed in the manufacture of dynamite, where the remarkable absorbent properties of the material come into play. Its use alone as a fertilizer, and also in the preparation of artificial fertilizers, especially in the absorption of liquid manures, is widespread. There is also an extended use of the earth for rapid filtration purposes, as well as for covering steam pipes, lining refrigerators, and filling the walls of fireproof safes. In the manufacture of water glass, of various cements, of glazing for tiles, of artificial stone, of ultramarine and various pigments, of aniline and alizarin colors, of paper, sealing wax, fireworks, gutta-percha objects, Swedish matches, solidified bromine, scouring powders, papier-maché, and a variety of other articles, there is a large and steadily growing demand.

For some of the purposes in question, and especially when kieselguhr is used to absorb nitroglycerin in the preparation of dynamite, it is of prime importance that the earth should be freed as far as possible from moisture.

METHOD OF TREATMENT.

In German dynamite works, where the purest grades of kieselguhr only are employed, it is ordinarily subjected to the following treatment:

The earth is first roasted superficially in large rooms, in order to destroy all organic matter and expel nearly all water present. It is then transferred to flame or muffle furnaces and heated at a higher temperature. Care is observed, however, not to raise the temperature too high, as the absorptive power is destroyed by overburning.

The earth is then ground to a fine powder between rollers and sieved. At this stage it should contain less than 1 per cent of moisture. The product is put into sacks and used the same day, before additional moisture can be absorbed.

Where all the precautions required for use in the dynamite works need not be followed, a prolonged drying in chambers supplied with steam pipes usually suffices. Careful provision is made for rapid ventilation by mechanical means, so as to remove the expelled moisture as rapidly as possible, and thus shorten the operation.

Some of the most important deposits of kieselguhr or infusorial earth are found in Germany. The region in which it is most abundant is the extensive Lüneburg Moor, which extends for about 50 miles between the rivers Aller and Elbe, in Prussia. Smaller deposits are worked in the Vogelsberg in Hesse and near Celle, not far from Hanover. [Plans of drying galleries and of rotary and calcination drums, with instructions as to their uses, accompanied Consul Norton's report, and are filed in the Bureau of Manufactures.]

FRENCH METAL PRODUCTION.

LITTLE OPPORTUNITY FOR MARKETING AMERICAN COKE IN EUROPE.

Consul-General Robert P. Skinner, of Marseille, advises that the following valuable statistics in regard to the production of iron and steel in France have just been made public by the proper department of the French Government:

	1906.	1907.
Pig iron:	*Tons.*	*Tons.*
Pig iron, first fusion	583,021	638,837
Refined pig iron	739,037	678,269
Bessemer pig iron	152,107	126,197
Thomas pig iron	1,787,146	2,105,100
Special pig iron	52,851	57,885
Total pig iron	3,314,162	3,606,288
Cast steel:		
Rails	328,474	343,630
Merchant steel, including wheel tires	932,691	778,029
Plates	366,080	346,683
Pieces for forging	29,773	53,888
Steel moldings	26,549	32,556
Total worked steel	1,683,567	1,554,786
Steel ingots	2,371,377	2,653,613
Steel blooms and billets	1,052,167	1,374,479
Wrought iron and steel:		
Merchant iron and steel—		
Obtained by puddling	.....	207,065
Wrought iron and steel—Continued.		
Merchant iron and steel—Continued.		
Obtained by charcoal process	.....	2,216
Obtained by reheating pig iron and steel, puddling iron, and old iron	.....	369,716
Total	658,481	578,997
Plates—		
Obtained by puddling	.....	7,942
Obtained by reheating pig iron and steel, puddling iron, and old iron	.....	100,310
Total	89,482	108,252
Total wrought iron and steel	747,963	687,249

WORLD'S OUTPUT OF PIG IRON.

PRODUCTION OF THE LEADING COUNTRIES DURING PAST THREE YEARS.

There was a small increase last year, according to the available statistics, in the world's production of pig iron. A table published in the Iron Age gives returns, in gross tons, from countries which produced more than 93 per cent of the total, with estimates for the remaining, as follows:

	1905.	1906.	1907.
	Gross tons.	*Gross tons.*	*Gross tons.*
United States	22,992,380	25,307,191	25,781,361
Germany	10,813,979	12,280,879	12,839,593
Great Britain	9,592,737	10,149,388	9,923,856
France	3,028,089	3,266,580	[a] 3,532,233
Russia	[a] 2,672,155	[a] 2,599,976	[b] 2,599,976
Austria-Hungary	[a] 1,560,000	[a] 1,575,000	[a] 1,900,000
Belgium	1,290,400	1,354,033	[a] 1,405,374
Canada	468,003	541,957	581,146
Sweden	518,967	595,231	[b] 595,231
Spain	387,402	373,248	[b] 373,248
Italy	140,818	133,158	[b] 133,158
Japan	47,613	[b] 47,613	[b] 47,613
Other countries	200,000	200,000	200,000
Total	53,712,543	58,424,254	59,912,789

[a] Not final. [b] Assumed from preceding year.

COAL AND COKE.

FRANCE.

LITTLE OPPORTUNITY FOR MARKETING AMERICAN COKE IN EUROPE.

Consul-General Robert P. Skinner, of Marseille, advises that only under exceptional circumstances does it appear possible to market American coke in France, owing to the proximity of other coke supplies, and the ordinarily very high freight rates charged upon shipments from the United States. He gives the statistics of the importations of coke into France during the last three years as follows:

Country.	1905.	1906.	1907.
	Tons.	*Tons.*	*Tons.*
Belgium	500,694	468,033	413,410
Germany	1,114,854	1,753,133	1,744,130
Others	17,293	36,700	18,210
Total	1,632,841	2,257,866	2,175,750

In 1901 a small cargo of American coke was received in Marseille, since which time no further importations from that source have been received. At present the prevailing price is from 20 to 24 francs ($3.86 to $4.63) per ton. The Paris, Lyon and Mediterranean Railroad Company is an annual buyer of about 5,000 tons, usually from the Marseille Gas Company, and other manufacturing concerns in this locality absorb small quantities. There are few large metallurgical industries in this region, which explains the insignificant local demands. Exporters of American coke who desire to submit propositions to local buyers are advised to correspond with any or all of the concerns whose addresses are forwarded [and filed with the Bureau of Manufactures.]

ITALY.

COMPLETION OF TUNNEL FOR TRANSPORTING COAL AT GENOA.

Deputy Consul Angelo Boragino furnishes the following information regarding new facilities for the transportation of coal from Genoa to factories in neighboring districts:

The transportation of coal from the landing piers at the Genoa wharves has been considerably increased by the opening of a tunnel, cut through solid rock, and leading to the adjacent city of Sampierdarena. Coal trucks drawn by mules, which will hereafter pass through this tunnel, will supply fuel for the consumption of the different factories lying between the city of Genoa and Voltri on the west and Bolzaneto on the northwest.

The dimensions of the tunnel are as follows: Length, 275 meters (902 feet); width, 15 meters (49.2 feet); height, 8 meters (26.2 feet). Constructive work was begun on August 1, 1907. Trucks transporting coal save a long ascending passageway, involving more than an hour's time. Some 600 carloads, averaging from 2½ to 3 tons of coal each, will pass through the tunnel daily. Its mouth begins on the pier, just under the fortress of San Benigno, and ends at Sampierdarena.

The question of the speedy transportation of coal arriving by sea to the factories of the north of Italy is the most engrossing problem of the port, and much importance is attached to any measure tending toward the relief of coal congestion on the local wharves. Three million tons of foreign coal were landed at Genoa last year.

UNITED KINGDOM.

AMOUNTS OF COAL MINED AND SHIPPED—NUMBER OF WORKERS.

Consul-General Robert J. Wynne, of London, submits the following summary of statistics issued by the British home office relating to the output of coal and other minerals and the number of persons employed at mines in the United Kingdom during the year 1907:

It appears that the output of coal in the year 1907 was nearly 268 million tons, being an increase of over 16½ million tons, or 6.7 per cent as compared with 1906. Every coal field, without exception, shared in the general increase of output. The three principal coal fields—those of South Wales and Monmouth, Northumberland and Durham, and Yorkshire, Nottinghamshire, and Derbyshire—had outputs of 50, 54, and 78 million tons, respectively, the South Wales coal field having increased its output by nearly 3 million tons, and the Yorkshire, Nottinghamshire, and Derbyshire coal field by 6 million tons, the increase in each case being over 6 per cent.

The exports of coal, coke, and manufactured fuel from the United Kingdom in 1907 amounted to 66,063,258 tons, and the quantity of coal shipped as bunker coal to 18,618,828 tons—increase of 8,271,054 tons and 28,615 tons, respectively, as compared with 1906.

The total number of persons employed at mines under the coal mines regulation act and the metalliferous mines regulation act in 1907, including a certain number of persons engaged in mining ironstone, fire clay, shale, etc., was 940,618, an increase of 58,273, or 6.6 per cent. In 1907 there was very little change in the output per person employed as compared with 1906.

CHINA.

AN AMERICAN ESTIMATE OF THE COAL RESOURCES OF THE EMPIRE.

Bailey Willis, of the United States Geological Survey, has just described in three volumes the geological traverse of about 2,000 miles in north and central China that his party made for the Carnegie Institution. He says that China's present needs require the working of all the coal fields to the depths permitted by Chinese methods, and that when the Empire develops her industries the productive capacity of all possible coal mines will be taxed. With her enormous necessities, he does not believe that China will have coal to export. He estimates the total amount of coal in north China at 605,000,000,000 tons, which may be 100,000,000,000 tons more or less out of the way. As far as is yet known, the larger part of the coal of China is in the northern fields, and this estimate of their content is 45,000,000,000 tons less than the United States Government estimate of the total amount of coal in the Appalachian fields.

MACHINES AND APPARATUS.

MODERN APPLIANCES.

FORMOSA.

ACTIVE MARKET FOR SUGAR MILL EQUIPMENT AND OTHER MACHINERY.

In reply to inquiries of manufacturers of machinery and of equipment companies Consul Julean H. Arnold, of Tamsui, furnishes the following information concerning the sugar industry of Formosa and imports of machinery and mill supplies therefor:

There is much activity at present in South Formosa in the erection of large modern sugar mills. Machinery for five mills, representing an outlay of several millions of dollars, is at present lying on the beach in Takao Harbor awaiting transportation to the sugar plantations. There are ten vessels now engaged in discharging or attempting to discharge cargoes of sugar machinery and mill equipments. The harbor facilities have been taxed to such an extent that large demurrage claims have been lodged by the shipping companies against consignees.

Outside of the Honolulu Iron Works, which has secured a contract for the erection of three large mills, no other American firms have booked any orders or appear to be interested in attempting to compete with the British and German firms, which are at present engaged in supplying the greater part of the machinery for the new mills.

SUGAR INDUSTRY AND MILL REQUIREMENTS.

Experts declare that the soil and climatic conditions of Formosa are peculiarly well adapted to the growing of sugar cane. The Formosan government is doing everything possible to encourage the growing of cane in the island. Furthermore, the Japanese Government is determined that Formosa, which at present supplies but 20 per cent of the Japanese consumption, shall supply the entire consumption, as well as enter the markets of China and the rest of the Far East. That capitalists in Japan have every confidence in the sugar industry of Formosa is attested by the fact that, in face of a financial stringency during the past year, over $10,000,000 has been subscribed to sugar manufacturing companies in Formosa.

There are still a number of mills to be contracted for, and future developments are bound to require extensions in the mills now under course of erection, and the native mills, of which there are a large number, must either amalgamate and erect modern mills or be absorbed by the larger companies.

In connection with the erection of the mills at present contracted for there will be a demand for good concrete mixers, pumps, and electric fittings. Naturally, the large mills all find the cane cars a necessity. Already 325 miles of sugar trams are contracted for, and

the little 20-ton locomotives are now puffing over the sugar plantations to an extent undreamed of a few years ago.

One of the larger companies has purchased two pairs of steam plows and pronounces the steam plow a necessity to the future welfare of the sugar industry in Formosa. The country is flat and lends itself well to the use of the steam plow. Undoubtedly within a few years the steam plow will be as common on the lowlands of Formosa as the sugar trams.

The government sugar bureau recently purchased three American windmills for experimental purposes in connection with irrigating their experimental sugar plantation in South Formosa. Water can be found at a depth of from 10 to 20 feet on the lowlands, and it is quite possible that the windmills may be found to be profitable in irrigation work. Whether windmills prove a success or not, the introduction of pumps throughout many of the plantations will be a necessity.

A GOOD FIELD FOR AMERICAN COMMERCIAL TRAVELERS.

This office finds that there is much ignorance on the part of the American business public as to the facilities which this island furnishes for the commercial traveler. Boats of 2,000 to 2,500 registered tonnage ply between Formosa and Japan on regular three and five day schedules. These have good passenger accommodations. From Kobe, Japan, to Kelung, Formosa, about 950 miles, is covered in three and one-half days. The government railway extends from Kelung, in the north, to Takao Harbor, in the south, about 200 miles. The various sugar plantations can be easily reached from this railway; in fact, many of the mills are being erected along the road. A splendid modern hotel is in course of erection in Taihoku, the capital city. Good Japanese hotels can be found all along the railway. Reports have been published in the United States from time to time in regard to savage warfare in Formosa which would make it appear that the island is overrun with head-hunting tribes, but savage tribes in Formosa are all confined to the heavily timbered mountain regions, and one may live on the lowlands for years and never see one of them. Life and property on the lowlands in Formosa are as safe from the attack of savages as they are in Japan. The island is remarkably well policed, and law and order obtain throughout the civilized portions. The American manufacturer who is looking forward to business relations with Formosa in connection with the sugar industry would do well to send his representative here to study conditions and interview prospective buyers personally. He need not be told that the catalogue is of little use without the man to explain it, especially among a people who read but little English.

ENGLAND.

A POWERFUL DREDGER TO BE USED IN THE HARBOR OF LIVERPOOL.

Consul John L. Griffiths sends from Liverpool the following description of an improved dredging machine being built for operation in that harbor:

It is claimed by leading English experts that the dredging since *1890 of the* River Mersey and its approaches has been one of the most

continuously successful undertakings of that character in the history of marine engineering. As the port of Liverpool is used by vessels of the deepest draft it is very important that the entrance channels at the bar and the approaches to the docks and the landing stage where the ocean liners embark and disembark their passengers should be kept not only free, but that a sufficient depth of water should be maintained at all stages of the tide. The Mersey docks and harbor board, for the purpose of overcoming the sand accumulation, in 1890 instituted suction dredging, which has been so satisfactory that the board has since then largely increased the size and powers of their dredgers, and recently has given an order for the construction of a dredger which will be the largest and most powerful ever built. The contract provides for a vessel which can lift 10,000 tons of sand in fifty minutes, and attain a speed, if necessary, of 10 knots. The dimensions of the dredger will be as follows: Length, 478 feet over all, 69 feet beam, and 30 feet 7 inches in molded depth.

The dredger is now nearing completion and when finished will have a hopper capacity of 180,000 cubic feet, which is to be filled from a maximum depth of 70 feet within fifty minutes, and as the total load displacement will be about 18,000 tons, exceptional strength will be a prominent feature of the hull and jointing of the dredger, and the shell plates will be three-quarters of an inch thick, 28 feet long, each weighing 2¾ tons, and the butts will be quadruple riveted. The dredger will have four centrifugal pumps, each of which will be driven by an independent engine, and when driven they will together lift the great quantity of sand mentioned. The propelling machinery will be of 3,500 indicated horsepower, and will consist of two sets of inverted vertical direct-acting triple-expansion engines, with cylinders 22½, 37, and 61, and a stroke of 45 inches.

SAFETY ARRANGEMENTS—DECK SWAMPING OVERCOME.

The engines for the propulsion of the dredger under way and for the pumping when at work will be supplied with steam from four single-ended boilers of the multitubular type, 16 feet internal diameter, and 11 feet 9 inches longitudinally. The boiler power is arranged forward of the hoppers and immediately behind the latter two pumping rooms are located, and still further back there are four single-ended boilers and the twin sets of screw-propelling machinery. There will be twenty-one water-tight compartments, so that ample provision will be made for the safety of the vessel in case of an accident.

Each of the four pumps will have separate suction tubes fitted to the side of the vessel, and they will be provided with underwater apparatus controlled by the sluice valves inside the dredger. The tubes will be 42 inches in diameter, the suction being of the double inlet type. The sluice valves on the ship's sides will be operated by hydraulic power. Side frames will be fitted for each suction pipe. Swivel bands will be fixed to the suction pipes, so they may have free horizontal or circumferential motion during the swinging of the vessel. The delivery pipes will act into two landers, which will run the full length of the hoppers, and will have inlets at each hopper.

There will be a marked advance upon the other types of sand-pump dredgers belonging to the dock estate in regard to the disposal of surface water. In the present type, the surface water overflows from the hoppers over the decks, and then over the sides of the vessel.

In the new dredger this "deck swamping" will be obviated, as the overflow on rising above a certain height will find its way over two weir plates and then be provided with an outlet through two trunks immediately above the load line. The discharge valves are to be of a cylindrical type, each having a lift of 4 feet, and they may be raised or lowered by a direct-acting hydraulic ram, the hydraulic engine being fitted in the pump room. The deck of the dredger will have four powerful steam winches for lifting the suction tubes, and four more winches for warping purposes, besides a powerful steam windlass for the anchors. The winches will each be driven by a vertical two-crank engine.

BRITISH INDIA.

NEED OF MECHANICAL APPLIANCES FOR TEA CULTURE.

Consul E. Haldeman Dennison, of Bombay, supplements Consul-General Michael's statements as to the need of mechanical appliances for tea growing in India. He quotes a commercial journal which says that labor is getting scarcer and higher. An implement is needed that will turn over the soil effectively without harming to any appreciable extent the rows of tea bushes, and also capable of crossing the narrow lateral drains with which the tea gardens are grid-ironed. It is also suggested that it is not impossible to alter plucking methods in such a way as to render the work accessible to a machine. Mr. Dennison adds that it would appear that here is an opportunity for American ingenuity to supply these much-desired improvements.

GERMANY.

WORLD RECORD ESTABLISHED FOR LOCOMOBILES.

Consul Frank S. Hannah reports that in some tests made in March in a factory at Magdeburg-Buckau, Germany, by an expert from Darmstadt, a new world record was established for "locomobiles" in the production of a maximum amount of steam by a minimum consumption of coal. The engine used to make the experiments was a newly constructed 100-horsepower patent steam "locomobile" (traction or stationary engine), with piston-valve distribution and use of superheated steam. The tests established that for each unit of horsepower 3.93 kilos (8.66 pounds) of steam and 0.473 kilo (1.042 pounds) of coal were consumed per hour.

NORWAY.

SUCCESSFUL TEST OF AN AMERICAN MOTOR ENGINE.

Consul Felix S. S. Johnson, of Bergen, reports that recently at Hardanger an American motor engine was installed in a Norwegian fishing smack. It was thoroughly tested, with the result that America will from now on enjoy a part of this trade. In Norway, as well as in the other Scandinavian countries, the governments assist their fishermen by loans which are returnable in ten years; first installment payable on the third year, then annually, with interest, until the whole amount is paid back. American motor manufacturers are *urged to* participate in the exposition to be held at Trondhjem this *summer.*

GERMAN WIRELESS RATES.

TRANSMISSION OF MESSAGES FROM AND TO SHIPS AT SEA.

Consul Wilbur T. Gracey, of Tsingtau, transmits the following information regarding wireless telegraph installations which have recently been placed on the ships of the Hamburg-Amerika line running between Shanghai, Tsingtau, and Tientsin in China:

Sea telegrams are those which are exchanged between ships at sea and the stations situated on land. They must, when forwarded via wireless stations, be either in plain words or in code terms contained in commercial cable codes. If intended for ships at sea, the address must contain, in addition to its usual contents, the name or official number of the ship and its nationality.

Rates from Tsingtau to ships at sea or vice versa are 5 cents Mexican (approximately 2½ cents gold) per word, with a minimum charge of ten words. For messages from ships at sea to other places or countries the rates of the German postoffice as published are applicable. In addition to this word rate a fixed sumptuary sea rate of 40 cents per message will be added. Total charges on messages sent to ships are payable by the sender, of messages received from ships by recipient.

Telegrams sent to ships at sea are, like all other telegrams, sent through the German post and telegraph office, and messages from ships at sea are delivered to recipients in the same way. A wireless station is situated at Tsingtau, and instruments have been installed on the "Admiral von Tirpitz" and the "Staatsekretar Kraetke," both of the Hamburg-Amerika line.

CHINESE TELEGRAPH LINES.

EXTENT OF THE GOVERNMENT SYSTEM—WORLD CONNECTIONS.

Consul-General James W. Ragsdale, of Tientsin, submits the following information with reference to the Imperial Chinese telegraph lines, gathered from reports recently published:

At the end of 1906 the administration had a system of 22,419 miles of telegraph lines, with 34,473 miles of wires and a submarine cable of 946 miles; 379 offices, of which 62 were open for day and night service, and 317 for day service only. The number of instruments in actual use was 768. The staff of the head office in Shanghai numbered 67 and the general staff 3,175, while inspectors, linemen, etc., totaled 2,400. In addition there are many provincial lines, usually constructed by the administration, but worked and managed independently by the provincial authorities. [The financial workings of the Chinese Government telegraph lines and the profits for 1906 were recently the subject of a report in Consular and Trade Reports from the Shanghai consulate-general.—B. of M.]

The telegraph companies having connections with China are the Great Northern, Eastern extension, German, Dutch, and Commercial Pacific, while the French cable connects Touraine with Amoy, a German cable Shanghai with Kiachow and Chefoo, and a third cable, partly Chinese, Chefoo with Port Arthur. China also has frontier connections with Burma, Indo-China, and Russian Siberia.

STEEL BELTING.

GERMAN TESTS OF NEW METHOD FOR TRANSMISSION OF POWER.

Consul Frank S. Hannah, of Magdeburg, writes that in a recent issue of a German technical paper, the use of steel bands to take the place of leather belting for the transmission of power is stated to have proved practicable after repeated tests by a firm in Charlottenburg, its advantages being given as follows:

The points of superiority claimed for this new method for the transmission of power are the following: On account of its solidity a much narrower band can be used, one-sixth of the width of the usual leather band being sufficient; as a result of this the steel band is not so heavy as the usual leather band, and, as it can be very tightly adjusted, the distance between the engine and the machine is not a matter of importance, as is the case with the leather belting, where the transmission of power is dependent upon the weight of the hanging belt; by a unique contact, the slipping is much reduced, experiments having shown that this does not exceed one-tenth of 1 per cent. Careful and repeated experiments have shown that the entire loss of power is very small, and as far as can be ascertained will not exceed 1 per cent. Further, owing to the lightness of weight of the steel belting, it is claimed, the influence of the centrifugal force is not so great and allows of a much increased velocity.

[Illustrations of the steel belting forwarded by the consul are filed with the Bureau of Manufactures.]

AUTOMATIC MONEY ASSORTER.

AUSTRIAN INVENTOR PRODUCES A NEW MECHANICAL DEVICE.

Consul Joseph I. Brittain reports from Prague that a recent issue of an Austrian journal gives an account of an automatic money assorter, which is thus described:

The inventor claims that it will assort metal coins which have been thrown together regardless of their denominations, placing each denomination in a separate basket. The various coins are thrown indiscriminately into a funnel at the top of the machine, and from the funnel they slide downward, alighting on a spiral track. This track has a protecting edge or raised border containing slits corresponding to the various sizes of the coins. As the coins of various denominations glide downward onto the track, through some peculiar mechanism of the machine they pass through the slits corresponding to their various sizes, entering their respective baskets at the bottom of the machine.

It is said that several firms handling large amounts of coin daily have tried the machine with satisfactory results.

FOODS AND DRINKS.

COFFEE TRADE.

BRAZIL.

DETAILS OF THE BUSINESS—AMERICANS THE GREATEST CONSUMERS.

Consul-General George E. Anderson, of Rio de Janeiro, states that there is an increasing number of individuals and firms doing business in the United States in coffee which display an anxiety to purchase coffee direct in the Brazilian markets to whom some information as to how the export coffee business is conducted is necessary, which he gives as follows:

Under ordinary conditions it is not practicable for dealers in the United States to become importers unless they are able to establish connection with a Brazilian house of an exceptional nature—not only a house in which there may be confidence, which may of course easily be had, but one so situated that it can buy and grade coffee of the particular grades needed by the small importer and do this at less expense than the great American importing houses.

Coffee in Brazil, as a rule, is sold by the planters to "commissarios," commission men who have a peculiar relation to the grower. Theoretically the commissario sells the planter's crop to the exporter upon a commission. Practically he is more or less of a banker for the planter, advancing him money from time to time during the course of a year as against the maturing crop and liquidating the indebtedness to himself on the part of the planter by a settlement which involves more or less of a direct sale from the planter to him. The relation between the grower and the commissario varies so that it is impossible for an outsider to count upon deriving any advantage from interference with it.

GRADING THE PRODUCT FOR MARKET.

While some planters do more or less work in the way of separating their coffee into the several commercial grades, the vast bulk of the coffee as received by the commissarios is of mixed quality as taken from the curing floors. Commissarios therefore generally clean and grade it, and it is put on the market cleaned and graded, though this is not always the case. Coffee as bought from the commissarios may be taken as the berry in its first commercial movement—in its primary market. Prices for coffee in this market are fixed, not only by general coffee conditions the world over but by the average quality of the particular lot in question, and by what further cleaning, separating, grading, and manipulation can do.

Coffee as known on the American and other foreign markets is often far different from what that same coffee was in Brazil. It is graded so that the component parts of any particular lot may exhibit the

qualities of several varieties—Mocha, Java, Santos, Rio, and the like. For the experienced buyers and roasters in the United States it is graded to give a particular quality of an infusion upon roasting, grinding, and infusion making, according to the methods of the house in question. Every lot of coffee must produce certain results corresponding to a certain grade. Its size, appearance, and apparent condition even can not be taken as final tests of what it is.

BEST METHODS OF BUYING.

The result is that coffee must be bought by sample to be bought intelligently. It comes from the commissario in small lots, as a rule, each of which is tested, sorted, and distributed according to quality until larger lots are formed. An American house requiring a large amount of coffee, therefore, will find it profitable to have a man on the spot to test, grade, purchase, and collect coffees of the required grades. The American importer who does not have such a representative must trust the quality of his coffee, the purchasing it, grading it, collecting it in sufficient quantities, and shipping it to a Brazilian house, which, after all, is in no position to do the work or perform the service any more cheaply than the American house having a representative.

Coffee purchased and graded by the great American importing houses which have representatives in the Brazilian markets is generally sold on the American markets at a profit over the actual cost to the importers in Brazil plus freight and expenses, but the fact that the coffee is handled upon so large a scale, with freight rebates, the advantage of having large stocks to draw from for any particular grade, and the general nature of the business in handling large quantities of a commodity which is a staple, is not injured by storage, is easily handled, and which up to a certain point is improved with age, renders this profit ordinarily a small one, and unless the average American jobber deals in a very large amount of coffee in the course of a season it is doubtful if the disadvantages he has in dealing in the Brazilian market at long range do not more than make up for this middleman's profit.

PRICE QUOTATIONS—LARGE SINGLE SHIPMENTS.

It is impossible for reasons indicated for the consulate to quote at any time, as it is often requested, prices for coffee ruling in the Brazilian markets. In the first place prices for coffee the world over are fixed largely by New York prices, the United States using something like half of the entire coffee crop of the world. At all events with few temporary exceptions, the New York prices for coffee represent Brazilian prices, plus the usual expenses of importing coffee in New York. Prices in any case are not of much value without definite knowledge of the specific quality of the coffee. Coffee grading New York Type No. 7, for instance, may include several grades which a practical buyer would take advantage of—i. e., the coffee would actually be worth something more or something less than the price quoted for the grade. The price quoted for the grade is merely representative or indicative of a range of prices.

There are Brazilian houses dealing in the Brazilian markets which *buy, clean,* mix, and sell coffee to the trade in the United States, *generally* on a commission basis, and evidently some American houses

find this advantageous, for the trade is maintained. The general movement, however, is in the direction of securing American supplies through houses having buyers here and importing coffee into the United States by the shipload. It is not at all uncommon in this consulate-general to certify to an invoice of a shipload of coffee in a single transaction, to a single consignee—a single consular document for half a million dollars' worth of coffee. While coffee freights to the United States are generally by the bag, 35 cents a bag being the standard rate, there are lighterage and other advantages in large shipments which naturally tell in the trade. [The consul-general names seven firms in Rio Janeiro buying coffee for export with whom he suggests correspondence might be profitable. These names are listed with the Bureau of Manufactures.]

CUBA.

VERY LITTLE GROWN—IMPORTATIONS ARE EXTENSIVE.

In response to a New York request for information as to the cultivation and market conditions of coffee in Cuba, Consul-General James L. Rodgers, of Habana, writes as follows:

The coffee industry flourished to some extent a good many years ago, but has been allowed to lapse into a state of comparative inactivity, and there is now no special culture except on large estates where coffee for the consumption of the owners and tenants is grown. Cuba does not grow enough coffee for its own use. This is shown for instance by the statistics for the fiscal year of 1905–6, in which it is stated that 20,690,539 pounds were imported, of which 5,926,850 pounds came from the United States; 2,023,639 pounds from Brazil; 9,997,963 pounds from Porto Rico; 2,485,498 pounds from Venezuela, and the remainder in small lots from Argentina, Costa Rica, Colombia, Haiti, Mexico, Santo Domingo, France, and the Netherlands. In the same fiscal year Cuba exported only 19,356 pounds, most of which went to Spain, thus indicating that it was locally grown coffee exported from sugar estates and haciendas owned by Spaniards.

HINDRANCES TO CULTURE—GOVERNMENT EXPERIMENTS.

It can be seen from these figures that the coffee culture of Cuba is practically in a state of desuetude and that apparently there is but little if any intention of reviving it by the owners of large estates. The reason for this is essentially the low price of coffee in the markets of the world; the difficulties attending its culture in Cuba; the high price of labor necessary; and the inclination of the people to devote their energies to more profitable crops, such as sugar cane and tobacco. These conditions are made all the more significant when it is stated that the great importation of coffee continues despite the fact that a duty of $18.70 per 100 kilos (kilo=2.2 pounds) is levied.

There are no statistics which bear directly upon the coffee production of Cuba, nor do there seem to be any settled and definite methods of culture, the processes varying with the individual opinions of the growers, and usually consisting of nothing more than crude harvest methods from trees which constitute groves practically growing wild.

The Government has of late been attempting to create some interest in the culture, and while in a few localities young plantations have

been set out, there is nothing as yet which provides satisfactory data to apply to the industry as a whole.

According to the best information obtainable the provinces of Pinar del Rio and Santa Clara contain the best remnants of the old plantations, these being situated in the high lands, and existing principally without cultivation. In every province of the island there is more or less coffee growing, but as stated there is at present but little intensive culture.

ALCOHOLIC BEVERAGES.

UNITED KINGDOM.

TESTIMONY ON PRODUCTION OF SCOTCH, IRISH, AND ENGLISH SPIRITS.

Consul-General Robert J. Wynne reports that some very interesting facts and figures in reference to the production of Scotch, Irish, and English spirits have been made public by the testimony of excise (internal revenue) officials summoned to appear before a government commission now sitting in London. The consul-general writes:

This commission is directed to inquire and report as follows:

First, whether in the general interest of the consumer or in the interest of the public health or otherwise it is desirable (*a*) to place restrictions upon the materials or the processes which may be used in the manufacture or preparation in the United Kingdom of Scotch whisky, Irish whisky, or any spirit to which the term whisky may be applied as a trade description; (*b*) to require declarations to be made as to the materials, processes of manufacture or preparation, or age of any such spirit; (*c*) To require a minimum period during which any such spirit should be matured in bond, and (*d*) to extend any requirements of the kind mentioned in the two subdivisions immediately preceding to any such spirit imported into the United Kingdom.

Second, by what means, if it be found desirable that any such restrictions, declarations, or periods shall be prescribed, a uniform practice in this respect may be satisfactorily secured; and to make the like inquiry and report as regards other kinds of potable spirits which are manufactured in or imported into the United Kingdom.

The official evidence shows that in the view of the excise authorities all spirits made in the United Kingdom are regarded simply as spirits. The object is merely to levy so much revenue on so much spirit, and nothing else.

REVENUE, PRODUCTION, AND CONSUMPTION.

The net amount of duty received on British spirits for the last year was $86,356,650, England contributing $32,926,174, Scotland $33,590,680, and Ireland $19,839,796. The quantity of spirit made during last year was 50,317,908 proof gallons, England furnishing 13,424,854, Scotland 24,839,870, and Ireland 12,053,184. The estimated consumption of spirits per head of the population works out at 0.74 proof gallon per head for the whole population. That figure is arrived at by dividing the total number of proof gallons of spirits on which duty was paid and passed out of the revenue control by the estimated population for a particular date, allowance being made for duty-paid spirits which come back into revenue control and on which a drawback has been paid.

Consumption includes stocks laid down in cellars and everything of that kind. There would be a considerable quantity wasted, and *a certain* amount would go for other purposes.

The actual number of distilleries in the different parts of the United *Kingdom now* working is: In England, 8; Scotland, 150; Ireland,

27. In addition to these there are in England not working, 1; in Scotland, 12, and in Ireland, 3.

MATERIALS USED.

The materials used in the manufacture of British spirits were malt, unmalted grain, including corn, barley, oats, rye, and wheat, rice, molasses, glucose, sugar, sago, tapioca, and other substances such as bran and malt combings. (Malt combings are the rootlets of the malted grain which break off while the malt is being dried in the kiln.) The last two mentioned were not really spirit-producing materials, but were employed mainly to promote fermentation. There was no restriction as to the materials which might be used for the production of spirit so long as the specific gravity of the worts produced could be ascertained by the hydrometer. The quantities used of the different materials in the last distilling year were as follows:

Scotland:			England—continued:		
Malt	quarters..	847,530	Glucose	hundredweight..	408
Unmalted grain	do....	496,798	Sugar	do....	2
Bran	hundredweight..	840	Bran	do....	1,541
Malt extract	do....	70	Sago	do....	3,593
England:			Tapioca	do....	1,393
Malt	quarters..	81,289	Malt combings	do....	6,237
Unmalted grain	do....	253,314	Ireland:		
Rice	hundredweight..	950	Malt	quarters..	215,151
Molasses	do....	1,065,509	Unmalted grain	do....	384,963

No other kinds of materials are used in Ireland. The totals of the foregoing materials are: Malt, 1,143,970 quarters; unmalted grain, 1,136,075 quarters; molasses, 1,065,509 hundredweight, and other materials, 15,034 hundredweight.

The average production of spirits from each class of material is, in gallons, as follows:

Classes.	Production.	Classes.	Production.
Malt per quarter..	16.5	Sugar per hundredweight..	10
Unmalted grain do....	20	Molasses do....	6
Sago per hundredweight..	7.5	Glucose do....	8.4
Tapioca do....	7.5		

Further statistics showed that in England only about one-fourth of the spirit produced was made from malt, in Scotland 58.4 per cent was made from malt, and in Ireland 31.6 per cent. Taking the United Kingdom as a whole the production of spirits was 39.3 per cent from malt, 47.4 per cent from unmalted grain, and 13.3 per cent from molasses.

Most of the spirit made from molasses was used for methylation or for industrial purposes. There were two kinds of methylated spirit. One of these contained 5 per cent of methyl alcohol mixed with it, and the other was mineralized methylated spirit, which contained 10 per cent of methyl alcohol and three-eighths of 1 per cent of mineral naphtha. The first was only allowed to be used by persons specially authorized by the commissioners of inland revenue, but the latter could be used by anybody and was the sort usually sold in the oil shops. Some molasses spirit was used for blending for drinking purposes, but not very much.

ENGLISH WHISKY—STRENGTH OF DISTILLATIONS.

English-made spirits were largely used by rectifiers and compounders for making gin, and compounds, such as cherry brandy,

cherry whisky, ginger, sloe gin, peppermint, and fruit cordials, and also for tinctures for medicinal purposes.

Both pot-still and patent-still distilleries used unmalted grain. In the latter the principal grain was corn, but oats, barley, and rye were also employed, as well as sago and tapioca. About 25 distilleries devoted themselves largely to the manufacture of yeast for sale. Some of these produced from 20 to 40 tons a week, and as the price was from $146 to $195 a ton the trade was an important one, though it has had to compete with German trade very much during the last twenty years.

When the spirit had gone through the process of manufacture to the spirit receiver its strength varied from 13 to 18 overproof, and where there was a second distillation it varied from 40 to 50 overproof. In Ireland the spirit produced was redistilled as a rule, and consequently it ranged between 40 and 50 overproof. When bonded, the spirit in Scotland was 11 overproof, and in Ireland about 25 overproof. By law the distiller might bond at any strength not below 20 underproof or above 25 overproof. Spirits were bonded at different strengths to suit circumstances.

PATENT STILLS—QUANTITIES OF SPIRITS IN STOCK.

With regard to patent stills, fusel oil was rather a valuable by-product, and was used principally for solvent purposes, as well as for a special kind of varnish, being sold at $1.22 a gallon. From the patent stills they ran the spirits continuously at a strength of 65 or even 69 overproof. That strength could not be obtained from pot stills. The spirit was reduced in strength only by the addition of water. The spirit was removed from the receiver to the spirit store under the locks of the excise authorities.

The quantity of spirits in store on which duty was paid last year was 1,286,912 proof gallons in England, 205,270 in Scotland, and 56,413 in Ireland. Irish whisky was more expensive than Scotch, partly because of the difference in the strength. Last year there were 6,055,285 proof gallons of British spirits methylated. The quantity of spirits now in bonded warehouses is stated as 10,897,109 proof gallons in England, 118,977,707 gallons in Scotland, and 31,773,593 gallons in Ireland. The amount of bonded whisky has been decreasing during the past four years. The export trade of British spirits is an important one, the quantity exported last year being 7,341,077 proof gallons, and the business seems to be on the increase. Patent-stilled spirit was cheaper than pot-stilled because of the larger proportion of corn which it contained.

GERMANY.

INCREASED QUANTITY AND VALUE OF WINE PRODUCTION FOR PAST YEAR.

Vice-Consul Joseph H. Leute, of Mannheim, furnishes the following information concerning the production of the German vineyards in 1907, based on the reports of specialists for the principal wine-producing communities of the Empire:

The production of the bearing vineyards in communities with an *extent of* 105,407 hectares (260,464 acres) was 2,208,660 hectoliters *(58,346,271 gallons)*, an average of 21 hectoliters (554.76 gallons) per *hectare (2.471* acres), or 224.5 gallons to the acre. The estimated

value of this production is 102,528,802 marks ($24,401,855), an average of 46.4 marks per hectoliter, approximately 42 cents a gallon, and 974 marks ($231.81) per hectare, or $93.85 per acre.

Taking these figures for a basis, the production for the 13,174 hectares (32,553 acres) of bearing vineyards of the Empire not included in the foregoing reports would be 276,654 hectoliters (7,308,369 gallons) with a value of 11,991,139 marks ($2,853,891). This would show a total production of 2,485,532 hectoliters (65,654,540 gallons) with a value of 114,519,941 marks ($27,255,756) for the 118,581 hectares (293,114 acres) of bearing vineyards in the German Empire in the year 1907, the average value being 966 marks ($229.91) per hectare, or $93 per acre. In 1906 the area of productive vineyards was 1,626 hectares (4,017.9 acres) greater than in 1907, while the amount of grape juice produced was but 1,635,727 hectoliters (43,211,110 gallons) of a total value of 70,169,605 marks ($16,700,366), an average of 584 marks ($138.99) per hectare ($56.26 per acre).

A comparison of the year 1907 with previous years shows that the amount of production was below the average, while its value was considerably above the average. For the 27 years for which the amounts of production in the Empire are known, the year 1907 takes fifteenth place and with its average of 2,485,532 hectoliters (65,654,540 gallons) scarcely comes up to the average for the other 26 years of 2,492,000 hectoliters (65,831,000 gallons). In point of average production per hectare, it likewise takes fifteenth place. On the other hand, for the 12 years for which the value of the production is known, it is in third place with its 114,519,941 marks ($27,255,745). The average for the preceding 11 years was 94,800,000 marks ($22,562,400). It has the same place in point of value of production per hectare. The year 1907 takes first place for the average value of a single hectoliter of grape juice.

INFECTION OF VINEYARDS.

INSECTS WHICH DESTROY THE VINES—METHODS OF EXTERMINATION.

Consul William J. Pike makes the following report from Kehl on the insect troubles which endanger German vineyards:

The destruction of vineyards by the annual appearance of insects affects the wine-growing districts of Alsace-Lorraine more than any other part of Germany, it is claimed. A year ago the vineyards seemed to promise the best yield for many years, when suddenly these destructive insects, which are peculiar to these vines, proved so disastrous that the wine business had a perceptible slump. No efforts have been spared to eradicate this great scourge, but to date no effectual remedy has been found, for the area infected is constantly on the increase.

In Alsace-Lorraine a conservative estimate places the area inflicted at one-fifth of all the vines in tillage. In Lorraine attempts have been made to root out this evil by the complete destruction of all the vines thus affected, but this method has become recognized as useless. The experiment of transplanting vines from America will soon be given a more thorough test. From the experiments already made along this line, it is thought that these vines will be immune to the insects, and that in this way the problem will be solved.

Some of the finest wines are produced upon the lands bordering the Mosel River in Prussia, which vineyards have, fortunately, as yet escaped the infection. It is feared, however, that they may also be subject to this danger, and on that account the Prussian Government is taking steps to carry on experiments looking to the annihilation of this serious and costly pest.

These contemplated measures consist in destroying all the vines along a narrow strip in northern Lorraine, which would separate the vineyards from those of the Mosel district in Prussia, in this way to prevent the possibility of the infection spreading to that section, as well as to save a considerable part of the vineyards in northern Lorraine, which have as yet not been affected.

MEXICO.

SMALL CONSUMPTION OF BEER IN THE CITY OF MATAMOROS.

In reply to an inquiry from the United States, Consul Clarence A. Miller reports that the consumption of beer in Matamoros amounts to only 10 or 12 carloads, of 300 cases of 5 dozen each to the carload, per annum, the greater part of this being consumed by American tourists, who visit the city in large numbers every year. All the beer consumed is produced in Mexico, there being no demand for any other. The Mexican population, largely of the working classes, drink very little beer; they can not afford such a luxury, beer being the dearest liquor sold in the country. Mescal costs but 3 cents a drink, American whisky and foreign wine 15 cents, while beer costs 25 cents a bottle.

[The names of two wholesalers and general importers of Matamoros, with whom the consul says American beer exporters might correspond, are filed for reference at the Bureau of Manufactures.]

MEAT PRODUCTS.

UNITED STATES.

NEW INSPECTION RULES AND REGULATIONS NOW IN FORCE.

The rules and regulations issued by the Bureau of Animal Industry in the Department of Agriculture, governing the inspection of meats and meat food products under the meat inspection law, took effect April 1. They provide against the use in interstate commerce and foreign commerce of meat unfit for food. All packing, canning, rendering, and similar establishments must be rigidly inspected. Exemption may be allowed to farmers or retail butchers supplying consumers. The following rules cover the most important features connected with the handling of meat products:

No trade label bearing the words "U. S. Inspected and Passed," or any abbreviation or simulation thereof, shall be used on meat or meat food products which have not been inspected and passed under these regulations, and no trade label bearing the inspection legend, or any abbreviation or simulation thereof, shall be placed upon meat or meat food products except under the supervision of an inspector.

Tin containers, embossed or lithographed with the label as prescribed in section 1, will be considered as bearing trade labels. On and after October 1, 1908, all sealed tin containers must have the number of the official establishment where packed, embossed, lithographed, or printed thereon.

The essential features of a trade label are as follows, and shall appear upon each label: The true name of the product; the inspection legend; the establishment number.

The inspection legend "U. S. Inspected and Passed," or an authorized abbreviation thereof, and the official establishment number in plain characters of uniform size, which shall be in proper proportion to the general lettering of the label, must be separately and prominently embodied in all trade labels.

In the case of meat contained in cartons, or in wrappers of paper, cloth, or other similar substance, the inspection legend and the official establishment number may be embodied in a sticker or seal of proportionate size prominently displayed with the trade label, but not necessarily a part of the trade label, such stickers or seals to be approved by the Department of Agriculture. It is not permissible to affix to meat or meat food products a detachable device of any kind which bears the inspection legend.

While labels to be affixed for foreign shipment may be printed in a foreign language, the same rules shall apply with reference to false labeling and the naming of ingredients as shall apply to goods prepared for domestic use. The inspection legend and the official establishment number must in all cases appear in English; but if desired they may in addition, literally translated, appear in the language of the country to which the package is destined.

USE OF DYES DEFINED.

Under regulation 22 the use of dyes, chemicals, and preservatives is provided for as follows:

There may be added to meat or meat food products common salt, sugar, wood smoke, vinegar, pure spices, and saltpeter. Only such coloring matters as may be designated by the Secretary of Agriculture as being harmless may be used, and these only in such manner as the Secretary of Agriculture may designate.

Substances necessary for the preparation, clarification, or refining of meat food products will be permitted to be used subject to the approval of the Secretary of Agriculture, provided they are eliminated from the meat food products during the further process of manufacture.

Meat or meat food products which have been inspected and passed and are so marked and are alleged to be unsound, unwholesome, or otherwise unfit for human food may be returned from one State or Territory or the District of Columbia to any jobber, wholesaler, or other dealer from whom the said meat or meat food product was purchased, if a written permit, in duplicate, for such shipment be first obtained from the Chief of the Bureau of Animal Industry.

In all such shipments both the original and duplicate copies of the permits shall be surrendered to the carrier accepting the meat or meat food product, and the carrier shall require the shipper to furnish two copies of the form of certificate hereinafter given. One of these certificates and the duplicate copy of the permit shall be retained by the carrier, and the other copy of the certificate, together with the original permit, shall be mailed by the carrier to the Chief of the Bureau of Animal Industry, Washington, D. C. If the meat or meat food product which is shipped under this section shall prove to be unsound, unwholesome, or otherwise unfit for human food it may not be reshipped in interstate commerce as a food product.

GERMANY.

PRICES ARE HIGH AND STEADILY ADVANCING.

In reply to inquiries, Consul-General Frank Dillingham, of Coburg, furnishes the following information concerning the number of animals slaughtered for food in Germany during the three months ended December 31, 1907:

Horses and other solipeds, 45,266; oxen, 153,201; bulls, 103,144; cows, 432,180; heifers, 273,572; calves, 1,043,084; hogs, 4,845,370; sheep, 603,160; goats, 139,794; dogs, 2,278.

In the statistics by States much more than one-half the animals slaughtered for all Germany was slaughtered in Prussia, viz: Horses,

30,145; oxen, 79,045; bulls, 65,924; cows, 259,967; heifers, 141,938; calves, 513,681; hogs, 2,927,329; sheep, 380,511; goats, 58,528; dogs, 506. Bavaria and Saxony, in their order, follow Prussia in the number of animals slaughtered. The dogs slaughtered in Saxony numbered 1,476, or nearly 65 per cent of the whole.

The prices of meats of all kinds in Germany are high and steadily advancing, and there is great suffering among the laboring classes because they are unable to buy the same oftener than once a week, and then only in limited quantities.

CANADA.

GREAT DEMAND FOR AMERICAN PACKING-HOUSE PRODUCTS.

Consul John E. Hamilton makes the following report from Cornwall on the growing popularity in Canada of packing-house products from the United States:

There has been a great demand in this consular district for American cured hams, bacon, and lard. Several large sales have been made, and the demand increases. This seems to prove that the hams, lard, and bacon cured in the United States are more appreciated than the Canadian products. The hams and bacon particularly are well cured, yet not dried up, and the lard is clear. Canadians can get these excellent goods for less money and can sell at lower rates, although having to pay a 2 cent per pound duty, as well as freight charges.

FLOUR MARKETS.

DENMARK.

STATISTICS OF PURCHASES—COMMERCIAL METHODS.

Consul-General Frank R. Mowrer, writing from Copenhagen, gives the following particulars of the Danish imports of flour:

Wheat flour is one of the chief articles of import into Denmark, owing to the limited quantity of wheat grown in the country. The following table shows comparatively the amounts imported:

	Sacks.	Pounds.		Sacks.	Pounds.
1901	276,000	60,720,000	1904	298,500	65,670,000
1902	303,500	66,770,000	1905	246,000	54,120,000
1903	352,000	77,440,000	1906	292,500	64,350,000

The increase was especially from the United States on account of the relatively low prices that prevailed until last year. In 1907, the quantity from the United States considerably diminished, owing to the price of $6.33 per 220 pounds c. i. f. Copenhagen for the best quality, as compared with $4.14 two years ago; while the price of an inferior quality increased during the same period from $2.92 to $4.62 per 220 pounds c. i. f. Copenhagen.

In addition to the importation of wheat flour for consumption in Denmark, an important transit trade is carried on by Copenhagen merchants with Finland, Sweden, and Norway. The free-port zone of Copenhagen offers excellent facilities for the storage and

transshipment of merchandise, which are utilized in handling large quantities of flour.

Orders for flour are usually placed for a certain quantity to be shipped within six months or a year, a sixth or a twelfth being delivered every month. It is said deliveries are often irregular, owing to delays in transit from interior points in the United States. The shippers decide on the route of transit, because quotations are made c. i. f., for acceptance of sixty or ninety day drafts on London against delivery of shipping documents. The bank commission for acceptance of these drafts is one-half of 1 per cent.

The principal demand of this market is for the better qualities of American flour, but at the prevailing prices this business is handicapped. [A list of important Copenhagen importers of flour may be obtained from the Bureau of Manufactures.]

GERMANY.

INCREASED CONSUMPTION BOTH IN QUANTITY AND PER CAPITA.

Statistics on the production and consumption of flour in the German Empire for the last fifteen years have recently been compiled, a summary of which is furnished by Consul William Bardel, of Bamberg:

According to these figures the production of flour in Germany, owing to the constantly increasing consumption of the same, has increased within the years 1893 and 1907 from 8,500,000 to 10,250,000 tons annually. This increase of production is attributable in the first place, to heavier consumption caused by increase of the population. Since 1893 the production of flour has been increased by 20.7 per cent, whereas the census shows an increase of 20.4 per cent in the population. In the second place, the increased production was brought about by a larger consumption of flour per capita.

The average per capita consumption of flour between the years 1893 and 1900 was 162 kilos or 357.145 pounds; whereas the annual consumption per capita from 1901 to 1907 increased to 165 kilos or 363.76 pounds. Of these 100 kilos or 220.46 pounds were rye flour and 65 kilos or 143.3 pounds were wheat flour.

During the last five years the production of flour in Germany remained the same, although the population continued to increase. The consumption of flour in Germany has been covered almost exclusively by home production, and the import of flour thus far is of little importance. It only amounts to 30,000 tons for wheat flour and 2,000 tons for rye flour.

BRITISH INDIA TEA.

AMOUNT SOLD AT LOCAL AUCTION IN EXCESS OF LAST YEAR.

Consul-General William H. Michael reports the close of the 1907–8 tea-selling season at Calcutta. At the 34 sales held up to February 15, 1908, 67,777,655 pounds were sold at local auction, as compared with 65,461,365 pounds during the same number of sales for the previous season. This increase of 2,316,290 pounds is considered satisfactory, as the total tea available during the season just closed was less than that of the previous season, and is set down to the fact that estates which formerly sent their product to London direct sent it this time to Calcutta.

FOREIGN FOOD SUPPLY.

PERCENTAGE OF IMPORTS INTO GREAT BRITAIN AND OTHER COUNTRIES.

In a statement presented to the British Parliament it appears that in 1906 the imports of wheat and wheat flour into the United Kingdom were 78 per cent of the total supply. In Germany the imports in 1905 (the latest year for which returns were available) were 35 per cent, and in France in 1906, 3 per cent of the total supply. It was stated that in the United Kingdom in 1906 imported supplies were of meat, about 47 per cent; of butter, 57 per cent, and of cheese 61 per cent of the total consumption. For France, the latest returns relate to 1892, and in that year the imports of meat were 3 per cent and of cheese 5 per cent of the total supply. Of butter there was a surplus exported. In Germany in 1906, under the old tariff, the imports of meat were 11 per cent of the total consumption. The United States has a considerable exportation of all these commodities.

The imports of wheat and wheat flour into the United Kingdom in 1906 were: From British possessions, 35,077,861 hundredweights (112 pounds each), of the value of £12,352,917 (£=$4.86), and from foreign countries, 77,598,089 hundredweights, of the value of £27,140,481. The quantity of wheat grown in the United Kingdom in 1906 was 32,474,164 hundredweights, of which probably 85 to 90 per cent was directly used for food by the people.

COCOA IN BRAZIL.

ITS CULTURE IS BEING PLACED ON A SCIENTIFIC BASIS.

Alluding to the Brazilian crop of over 50,000,000 pounds of cocoa last year, Consul-General George E. Anderson writes from Rio de Janeiro as follows:

In spite of temporary setbacks now and then, due to special causes, the production of cocoa in Brazil seems to be growing at a satisfactory rate, the increasing exports of the product forming one of the promising features of the Brazilian agricultural and trade situation. The governor of the State of Para in his last message speaks of the industry as being in the most flourishing condition, and the immense increase in the world's demand seems to have more than made up for the increase in the world's production, notably the production of Brazil. At present Brazil leads in the world's production and the United States in the world's consumption.

The productive capacity of cocoa in Brazil is almost limitless. In Para and Bahia the cultivation of the crop is being placed upon a scientific basis and it is probable that the next few seasons will show an immense increase in Brazil's output.

AGRICULTURE.

CROPS AND FARM METHODS.

SPAIN.

RICE GROWING EXPERIMENTS GIVE LARGE YIELD AT VALENCIA.

Consul Charles S. Winans, in the following report from Valencia, shows the successful results of rice-growing experiments in that part of Spain:

The great interest taken in rice production in this region, the increasing home consumption and enhanced value of rice lands, which now command $700 to $1,000 an acre and let at a yearly rental of $30 to $45, induced the director of the Model Farm and Experiment Station of Valencia to give special attention to continual experiments with new varieties of seed imported mostly from Japan. The experiments of the past season were remarkable for the extraordinary yield of some varieties, constituting probably a world record in rice growing.

The following are the principal varieties experimented with, the dates of harvesting, and the net yield per acre of rice in the husk:

Varieties of rice.	Date of harvesting.	Yield per acre.	Varieties of rice.	Date of harvesting.	Yield per acre.
		Pounds.			*Pounds.*
Amonquill (a Japanese rice imported 16 years ago and now universally grown here)	Sept. 14	7,700	Japanese, late "Shirazu"	Oct. 30	8,580
Japanese, early "Wase"	Sept. 23	7,320	Japanese, early "Sh'n Shu"	Sept. 19	10,385
Japanese, medium "Samba"	Oct. 13	8,670	Japanese, medium "Sakitori"	Sept. 30	9,540
			Japanese, late "Taku Mari"	Oct. 4	9,130

To obtain these results the experimental plots were filled to the depth of 20 inches with soil of perfectly homogeneous composition, carefully mixed, giving the following analysis:

	Per cent.
Clay	18.20
Sand	38.45
Lime	29.20
Organic matter	3.03
Oxides of iron and alumina	2.80
Moisture	2.50
Undetermined substances and waste	5.73

The chemical analysis of the soil was: Nitrogen, 1.04 per 1,000; phosphoric acid, 1.85 per 1,000, and potash, 1.83 per 1,000.

On March 15 the plots were irrigated and completely covered with water. On the following day the soil was upturned with spades and left under water until the 21st, when the seed was sown and again inundated with a shallow covering of water.

During the process of germination the seed was distributed by rough weather and high winds that swept the surface soil and young

plants against the sides of the inclosures, necessitating replanting of the greater part and consequent retardation of crop ten or twelve days. On May 28 the water was drained off and the plots left to the action of sun and air for eight days, when fertilizers to the extent of 700 pounds to the acre were applied, 350 pounds being superphosphates of lime, 262 pounds sulphate of ammonia, and 88 pounds potassic chloride.

The first ears of rice appeared July 18, and the experiment inclosures were then covered with netting to protect the grain from the ravages of wild fowl, particularly sparrows. The extreme care employed in these experiments would not be possible in rice growing on a large scale, as not a single grain, according to the director, was lost in cultivation and harvesting. It may be added that the date of harvesting of nearly all the varieties referred to is much too late for this district, as the enormous weather risks inseparable from late harvesting could not be compensated by the extra yield.

KOREA.

INDUSTRIAL MODEL STATION ESTABLISHED BY THE JAPANESE.

The following information concerning the establishment of an agricultural experiment station, combined with an agricultural college for the education of Korean farmers and the development of the resources of the country, is furnished by Consul-General Thomas Sammons, of Seoul:

The model farm and college, although initiated by the Japanese residency-general at Seoul, were later transferred to the Korean government. The institutions are situated at Suwon, 25 miles from Seoul, the capital of the country. Suwon is a walled city inhabited by about 10,000 Koreans and 1,000 Japanese.

The college buildings, equipped with a competent staff, are commodious and well built, and provided with physical and chemical laboratories. The dormitories had to be heated in the Korean manner, beneath the floors, in order to secure the attendance of Korean students. About 212 acres of land are used for experimental purposes, and $44,000 is annually appropriated to maintain the institutions.

The main experiment station is equipped along modern lines. The various seeds, cereals, and roots; crop-destroying birds, insects, and reptiles; grass-cloth mats, leaf growths, cotton, tobacco leaves, peanuts, millet, etc., are suitably exhibited. Modern agricultural implements are also on exhibition.

TO INCREASE THE COUNTRY'S PRODUCTS.

In the nine months during which the station has been in operation it has experimented with sugar beets, rice, cotton, barley, silkworms and mulberry trees, farm animals, rye, and wheat, besides serving as a meteorological station. The experiments with cotton and silkworms are considered as opening up a great future to the Korean farmers. Grass cloth is also thought by the managers to be one of the main products of the future, while beans and tomatoes are favorably considered. Foreign cottonseed is being distributed through the country with excellent results. The juice secured from the Korean beets averages 13 per cent of sugar, with a purity of 88 per cent. It

is feared, however, that the droughts will constitute a formidable hindrance to the sugar-beet cultivation. The rice experiments have been very successful and of singular interest to the Korean farmers, rice being one of the chief crops of the country. Korean wheat, although inferior, grows well. The foreign wheats introduced at the station were killed by the extreme cold of the winter months, but the Japanese professors still hope to be able to introduce them into the country.

Notwithstanding the favorable experiments for Korean silk, it will take many years before it reaches a state anything like perfection, on account of its yellow color and crudity, the mulberry trees being large and uncultivated. But as it is thought that the mulberry tree was first introduced into Japan from Korea, and as the Japanese in charge point out that they can recall when Japanese silk was as crude as is the Korean product, they are hopeful for the industry.

The experimenters find that tobacco grows better in Korea than in Japan, but the leaf does not come up to the high American standard.

BRITISH INDIA.

BETTER SEED AND BETTER METHODS OF CULTIVATING THE SOIL.

Consul-General William H. Michael, of Calcutta, furnishes the following information concerning the efforts being made by the governments of India for the betterment of the farmers:

The central and local governments of India are doing a great deal in various ways to help the farmers. A circular of the Bengal department of agriculture, recently issued, referring to the Bengal seed store, located in Calcutta, says that this store was opened to meet a long-felt want. It was established to cooperate with different provincial farms where definite varieties of seed are grown. After deducting the farm's own requirements for the ensuing season the seed is sent to Calcutta, where it is cleaned, tested, and stored in rat-proof bins, specially designed for keeping the seed clean and dry. In all transactions it was decided that local rates would be charged, the government bearing the expense incurred by rent of depot and the charge for running the establishment. The buyer therefore gets all the benefit of tested seed of a known variety at usual rates. The report says:

> In all 88,354 pounds of seeds were distributed during 1907, without including sugar-cane cuttings. On an average 21 pounds of seed will give sufficient seedlings to transplant 1 acre of rice, and 60 pounds is sufficient for broadcast cultivation, and we supplied 11,520 pounds of seed (i. e., sufficient) for 314 acres. The area for 1907 in Bengal under rice (Aman and Aus) was 24,291,500 acres. Therefore the field is vast enough for many private undertakings. Next, 21,280 pounds of jute seed was distributed, and the area under jute in 1907 for Bengal alone was 931,100 acres. Now, 9 pounds of seed are required per acre, therefore we were responsible for 2,364½ acres.
>
> Besides seeds, we store at the godown a few fertilizers for the use of cultivators, who may obtain small quantities at the lowest market rates. We must state, however, that artificial manures are not yet appreciated by the farmers, and, except by experimental stations and a few planters, very little seems to be used in Bengal. When we consider that in 1905 more than 1,500,000 tons of nitrate of soda alone were used as manure, chiefly in Europe and America, the development in this branch seems inestimable. In addition to seeds and manures a few improved implements are stocked, but work in this branch is hampered for want of accommodation and a testing place where implements could be properly tested in a practical manner before being sent out.

BOHEMIA.

SMALLER YIELD OF GRAIN, BUT MUCH MORE MONEY REALIZED.

Consul Joseph I. Brittain forwards from Prague the following report on the grain production of Bohemia for the year 1907:

Owing to the unusually late season last year and the extremely wet weather the production of the various kinds of grain was not up to the average. The quality, however, was good and the prices realized were correspondingly high. From the present prices received for the various kinds of grain it would appear there is an opportunity for exporting from the United States. The price of wheat on March 11 was $4.60 per 100 kilos, or 220 pounds, and of rye $4.28. The following statistics show the yield of grain in Bohemia for the past three years, and for the ten-year average, 1897 to 1906:

Crop.	1907.	1906.	1905.	1897-1906.
	Tons.	*Tons.*	*Tons.*	*Tons.*
Wheat	425,680	439,570	363,070	342,910
Rye	866,580	790,510	733,280	621,910
Barley	582,440	657,180	533,710	593,490
Oats	741,880	760,800	448,200	546,600
Total	2,616,580	2,648,150	2,078,260	2,104,910

The 1907 crop of grain was valued at $111,000,000, and that of 1906 at $83,000,000. The following table shows the value of other agricultural products in Bohemia during the years 1906 and 1907 and the average for the past ten years:

Crop.	1907.	1906.	1897-1906.	Crop.	1907.	1906.	1897-1906.
	Tons.	*Tons.*	*Tons.*		*Tons.*	*Tons.*	*Tons.*
Potatoes	3,711,240	3,758,830	3,060,190	Cabbage	318,130	197,530	104,550
Sugar beets	4,001,120	3,901,770	3,636,570	Poppy seed	6,180	3,610	1,870
Vegetables	72,190	58,800	54,010	Clover hay	1,452,350	1,162,340	773,680
Rape seed	13,330	14,110	15,350	Other hay	1,781,530	1,723,060	1,250,960
Flax	11,590	16,470	14,800				

TRINIDAD.

PROFITABLE RETURNS FROM BOTH COCOA AND SUGAR.

Consul Wm. W. Handley makes the following report on the successful cocoa and sugar crops last season in the West India island of Trinidad:

This island's cocoa crop for the calendar year 1907 was a very full one. Official figures show an export of 41,038,204 pounds, an increase over the previous year of 12,409,660 pounds. The crop was valued at approximately $8,900,000. Of this amount $1,300,000 is to be credited to Venezuelan cocoa, which was brought here in small boats from that country to be prepared and shipped to foreign markets. Of the 251,755 bags of cocoa shipped from Trinidad, 114,749 went to New York; 134,611 to Europe (principally France); and 2,388 bags to Canada. Considering the high prices that the produce has realized it is a very gratifying crop. For the month of January 46,139 bags were exported, which is very nearly treble the output for January of the previous year.

The present outlook for a large crop during 1908 is encouraging. Considerable interest has been manifested here, the past year, by both

the government and the cocoa planters in making a strong effort to eradicate the fungus diseases and insect pests affecting the cacao trees. The planters are giving more attention to the treatment of the soil, cover crops, shade, wind belts, pruning, etc., and endeavoring not only to maintain the high market position which Trinidad cocoa has enjoyed for some years, but to improve it.

The sugar crop for the year 1907 was satisfactory. The eighteen plantations in Trinidad produced 50,564 tons, which is 12,411 tons less than the previous year's record crop. The Usine St. Madeleine turned out 13,591 tons. There were 6,557 East Indians (coolies) and 5,777 West Indian laborers employed in gathering the crop. England and Canada share the market for Trinidad sugar. There were 175,732 bags shipped to England and 244,759 bags to Canada. None was exported to the United States, although a considerable quantity was shipped to Canada via New York.

KONGO FREE STATE.

TOBACCO CULTIVATION—POSSIBLE COMPETITION WITH AMERICA.

Consul-General Henry W. Diederich, writing from Antwerp, says that the soil in certain parts of the Kongo Free State has proved very favorable for the cultivation of tobacco, the prospects for which he discusses as follows:

Stanley refers to this fact in his reports, in which he says that he saw throughout the Dark Continent the tobacco plant, and that a large portion of the population made use of the weed. From experiments made it has been shown that the plant grows in abundance in the Free State and that certain species have a peculiar flavor of balsamic nature hitherto unknown. The Kongo tobaccos are destined to be successful not only for the cut varieties, but also for the manufacture of cigars.

The Belgians, who are essentially a cigar manufacturing people, have devoted much time to the improvement of the Kongo product and expect to compete to advantage on the European market with American tobaccos. It is expected that before long tobacco will constitute one of the most important resources of the African Continent. The tobacco trade is frequently disturbed by the constantly increasing prices of foreign tobaccos and many merchants are looking forward to the advent of the Kongo product in greater quantities to more nearly equalize supply and demand.

UNITED KINGDOM.

EXCELLENT YIELDS OF THE VARIOUS CROPS FOR THE PAST YEAR.

Consul Robert J. Wynne sends from London the following published statistics of the British crop yield in 1907:

According to the official returns of produce of crops in Great Britain, published by the board of agriculture, the summer of 1907 was a most productive one and in most respects proved superior to the average summer for the previous ten years.

Although the total amount of the various crops was in some cases exceeded in 1906, the total yield per acre last year was, with two exceptions, far greater than that of the preceding year or than the ten-yearly average.

Only the potato and the hop crops fell short of the ten-yearly average in 1907; all the rest far exceeded it, and the yield of oats constituted an actual record.

The following table shows the yield per acre of the various crops last year, as compared with the average yield for the preceding ten years:

Crop.	Yield in 1907.	Average 1897-1906.	Crop.	Yield in 1907.	Average 1897-1906.
Wheat.....bushels..	33.96	31.22	Turnips and swedes....tons..	14.13	13.15
Barley.....do....	35.26	33.14	Mangold.....do....	19.86	19.17
Oats.....do....	43.04	39.29	Hay, clover, etc.....cwts..	32.97	29.56
Beans.....do....	34.50	29.50	Hay, permanent grass..do....	27.23	23.99
Peas.....do....	29.44	27.10	Hops.....do....	8.33	8.81
Potatoes.....tons..	5.42	5.75			

Although the yield per acre was so abundant, the total yield in many cases fell short of the 1906 aggregate, as the following table will show:

Crop.	1906.	1907.	Crop.	1906.	1907.
Wheat.....quarters..	7,577,000	7,066,000	Turnips and swedes..tons..	27,583,000	26,181,000
Barley.....do....	8,435,000	8,387,000	Mangold.....do....	9,881,000	10,118,000
Oats.....do....	21,859,000	22,961,000	Hay (all kinds).....do....	13,512,000	15,603,000
Potatoes.....tons..	6,089,000	5,224,000			

The report considers the fine harvest as partly attributable to the healthy seeds produced by the crops of the hot summer of 1906, and it also points out that the fine weather of last September was in many cases the salvation of the farmer.

AUSTRALIA.

POSSIBLE PRODUCTION OF VARIOUS ARTICLES FROM THE PRICKLY PEAR.

Consul-General Orlando H. Baker, of Sydney, New South Wales, furnishes information concerning the prickly pear in Australia and the counter opinions prevailing as to whether it should be eradicated as a pest or cultivated for its commercial uses:

The invasion of the prickly pear, which has rendered thousands upon thousands of acres of good pastoral and agricultural land in New South Wales and the adjoining States useless, is a problem that has been brought more to the front of late by the big bonus offered by the Queensland government for an effective means of eradicating the pest on a wholesale scale. At the same time, there is a question of whether this seeming pest has not its commercial uses. Regarding the subject from this point of view, a Brisbane chemist has, as a result of experiments, accumulated quite a number of means of turning the prickly pear to useful and highly remunerative account. He sees in this despised plant commercial possibilities quite alluring, and calculated rather to encourage its cultivation than its ruthless destruction.

In his report the Brisbane chemist gives a number of uses to which the prickly pear may be put. Among them he names alcohol, tests showing that 7 gallons could be secured from a ton of prickly pear; feed cake for stock feeding; strawboard and paper; and pulp, which may be pressed by hydraulic force into household articles, floor cloth, etc. Prickly pear also contains much saccharine matter which makes an excellent sugar. [The most practical use yet found for the prickly pear of the southern portion of the United States has been for stock feeding. The Department of Agriculture is encouraging the employment of a plumber's torch to scorch off the spines; when this is done it makes such an excellent food for cattle that they may be sustained on it alone, without other food or water, for many months through a dry season.—B. of M.]

THE AZORES.

HIGH PRICES OF CORN AND PROHIBITION OF EXPORTATION.

Consul John F. Jewell, of St. Michaels, under date of March 23, reports as follows on the corn shortage in the Azores, indicating that it may be necessary to make importations:

On account of the great increase in the price of corn, and in view of avoiding a possible crisis in the supply of this article of food, owing to its present scarcity and the probable shortness of this year's crop, the civil governor has issued a decree prohibiting the exportation of corn from St. Michaels. It is unofficially reported that the same conditions prevail in the other Azorian islands as at this place.

Corn is grown in abundance in ordinary years, and in addition to being the principal article of food of the rural and laboring classes, is largely exported to Lisbon. An unusually large quantity was shipped the past year. The present price in St. Michaels is equivalent to $1.25 to $1.35 per bushel. It is feared that the price will increase and suffering result among the poorer classes as a consequence. There is enough for present needs if economy is practiced; but during the past three months the rainfall has been light and the corn planted is very backward. Rain is at present greatly needed and a short crop is feared if the drought continues.

PHILIPPINE ISLANDS.

NEW OIL-MAKING MATERIAL OF COMMERCIAL VALUE.

Consul Robert P. Skinner advises that sample lots of nuts, known in Manila as "lumbang" nuts (faux baucoulier abrasin), and kimiré nuts in Java have been received in Marseille, and have produced an oil closely resembling linseed oil. It is stated that these nuts are worth about 30 francs per 100 kilos ($5.79 per 220 pounds) in Marseille, as against 41 francs ($7.91) for small white Bombay sesame seed, 33 francs ($6.37) for shelled arachides, and 30 francs for palm-kernels and Illipi nuts. This new oil-making material appears to have a positive commercial value, and deserves attention at the hands of Philippine exporters and American oil crushers.

CATTLE RAISING IN BELGIUM.

THE OCCUPATION AN IMPORTANT INDUSTRY IN THE KINGDOM.

According to information furnished by Consul-General Henry W. Diederich, of Antwerp, Belgium has an abundance of excellent pasturage, and the raising of cattle forms an important occupation of the people. He writes:

The country is noted for four of its breeds of cattle—the Blue breed, the Flemish, the Ardenne, and the Condroz. The Blue cattle are raised in Brabant and Hainaut. They thrive best in the warmer climates or hilly countries, where the cold is not excessive. The cow gives 3,600 to 4,000 liters (1 liter=1.0567 quarts) of milk per annum, and 25 to 30 liters yields 1 kilo (2.2 pounds) of butter. The characteristics of the Flemish cattle are the same as those of the Blue, save that the oxen are very strong and highly prized for field labor.

The Ardenne cattle are raised in the mountainous parts of Belgium, and are of the greatest interest to American cattle breeders, because, although not so well developed as the preceding breeds, they are easily acclimatized. The cow gives 1,600 to 2,500 liters of milk per annum, and 26 to 29 liters of the milk yield 1 kilo of butter. The meat is in much demand for its fine flavor. The Condroz cattle combine the characteristics of the Blue and Ardenne breeds. The cow gives 2,500 liters of milk per annum, of which 25 to 30 liters yield 1 kilo of butter.

In addition to pasturage Belgium cattle are freely fed on prepared fodder, according to approved formulas, and it has been proved that each animal gives a profit in proportion to the kinds and quantities thus fed to it.

DAIRYING IN SYRIA.

EXCELLENT OPPORTUNITY FOR AMERICAN CREAMERY IN ASIATIC TURKEY.

Consul-General G. Bie Ravndal writes from Beirut that in Syria there is not a single dairy, and the need of such is strongly felt by foreign residents. He states that the following suggestions addressed to him by a prominent American in that city have his approval:

I would like to call your attention to the great opportunity of operating an up-to-date dairy plant in this region. If an American firm could be persuaded to establish a dairy and creamery fitted up with the latest appliances, in central Syria (the Beka plain), I believe the venture would be successful from the beginning. It could supply the cities of Beirut and Damascus with milk, cream, butter, and cheese. There are many institutions, colleges, convents, hospitals, tourists' hotels, etc., which would undoubtedly purchase the products from such a concern. At present, you know, the butter supply is insufficient, and in addition to that imported from Denmark or Italy there is a further strong demand for a high quality of not only butter, but also other dairy products of local origin. Here is a promising field for an enterprising American company.

TRANSPORTATION.

WORLD'S RAILWAY SYSTEMS.

BRAZIL.

SYSTEM CENTERING AT SAO PAULO—THE NEW NORTHWEST ROAD.

The following information concerning the conditions of the railways centering at Sao Paulo, and the new road which is to run through an unexplored country, is furnished by Deputy-Consul-General Joseph J. Slechta, of Rio de Janeiro:

When the American-Canadian syndicate took over the Sorocabana Railway, in the State of Sao Paulo, speculations arose as to how far the syndicate's influence would extend toward dominating the entire railway situation in Southern Brazil. A brief outline of the railway systems contering at Sao Paulo may help to explain a critical situation. The city of Campinas, 50 miles northwest of the city of Sao Paulo, is the point of concentration of the Mogyana system, which, with the possible exception of the Leopoldina, has the greatest mileage of any railway in Brazil. The main trunk of this system parallels the eastern border of the State of Sao Paulo and extends into the western portion of the State of Minas Geraes, and is being rapidly extended in conformity with the plans to tap the southern and central portions of the great State of Goyaz. The branches of this system extend to or across the border of Minas Geraes, along the south and east, and recently the system has acquired interests in some of the smaller railways in western Minas Geraes. It is reported to have purchased the Muzambinho Railway, which connects with the Minas & Rio, a Government line. The Mogyana can, by extending a branch running from Casa Branca to the border of Minas Geraes, connect with the Muzambinho, and thus give direct communication between the north of Sao Paulo and Rio de Janeiro. Plans are under way for the construction of this connecting link.

THE PAULISTA AND SOROCABANA LINES.

Thirty miles northwest of Sao Paulo is the city of Jundiahy, whence runs the main line of the second system, the Paulista Railway. Its main trunk is more or less a parallel line to that of the Mogyana, and its branches extend on each side into the territory more or less tributary to the Mogyana and the Sorocabana systems. Its main line from Campinas to Jundiahy is fed by its own system and that of the Mogyana, but neither of these systems have lines running into the city of Sao Paulo, as has the Sorocabana, goods from both lines being transferred at Jundiahy to the Sao Paulo Railway, which monopolizes the traffic from Jundiahy to Santos.

The Sorocabana is the only one of the three systems having direct access to the city of Sao Paulo, but is dependent upon the Sao Paulo

Railway to get its freight to the seaboard. The Sorocabana has a main line running west and a little north of the city of Sao Paulo, The most important branch runs to the northward and parallels the main line of the Paulista. A short branch running southward, having its present terminus 75 miles from the northern border of Parana, is to be extended into the State of Parana, and together with other lines now in operation, with which connection is to be made, will constitute the Sao Paulo-Rio Grande do Sul Railway, giving rail communication between Rio Grande do Sul and Soa Paulo and Rio de Janeiro.

These three principal systems of Sao Paulo have, until quite recently, been in keen competition with one another. Now, however, they seem to have come to the conclusion that they have many interests in common and particularly that they are mutually interested in a settlement whereby they may acquire a share in the profits of transportation to the seaboard.

EFFORTS TO HARMONIZE THE SYSTEM.

A recent indication of the harmony of interest manifested on the part of the three systems is an agreement entered into by the directors of the Sorocabana and the Paulista railways, whereby the former is to construct a branch from Itaicy, a point on the north branch of the Sorocabana, to Campinas, which is the southern terminus of the Mogyana. This projected branch would give connections with the narrow-gage lines, and enable both the Paulista and Mogyana railways to ship directly into Sao Paulo without transfer to the broad-gage line of the Santos-Sao Paulo, running from Jundiahy to the city of Sao Paulo. TheMogyana shows an intention to build a line from Itaicy or other convenient point to Santos, which would give an outlet to the seaboard for all three systems.

This procedure has already brought the Sao Paulo Railway to the point of offering terms of conciliation in the shape of a promise to abandon some projected extensions, to give 10 per cent of freight charges on all goods carried between Jundiahy and Sao Paulo, transferred to or from the Mogyana Railway, and to further favor the latter by special rates. The Mogyana has refused to accept the terms, indicating that the intention is to either go on with plans for the extension to Santos or to force the Santos-Sao Paulo Railway to offer still more favorable terms. In the meantime, rates between Santos and Sao Paulo are kept very high and the pressure on the Sorocabana is great to induce its new control to extend a line to the seaboard.

BROAD GAGE BETWEEN RIO AND SAO PAULO.

The President of the Republic made a special visit to the city of Sao Paulo this week to be present at the inauguration of the final section of the broad-gage railway between the Federal capital and the capital of the State of Sao Paulo. The work of substituting the broad gage for the narrow gage on this, the main trunk of the Central Railway of Brazil, has been going on for many years and its completion provides for much faster and altogether better service between Brazil's two largest cities.

Inauguration ceremonies have also marked the opening of traffic on extensions of two branches of the Sorocabana Railway, both of whose terminals have been pushed nearer to the border of Parana.

The southern branch is to connect at the Parana River with the Rio Grande do Sul and Sao Paulo Railway, which is being rapidly extended northward across the State of Parana.

THE NORTHWEST RAILWAY.

About two years ago work was begun by a French company under contract with the Brazilian Government in connection with the construction of the railroad known as the "Noroeste." The importance of this railway, as at present planned, bids fair to outrank any railway enterprise undertaken in South America within recent years. The initial station of this road is Bauru, the present terminus of the northwest branch of the Sorocabana Railway in the State of Sao Paulo, whence the line extends northwestward. There is now 110 miles in operation, serving a territory which two years ago was virgin and scarcely well explored. Surveys are completed to the point where the railway is to cross the Parana River, which forms the boundary line between the States of Sao Paulo and Matto Grosso. The road to this point is to be in operation within two years. From the Parana more or less definite surveys have been made northwestward across the southern part of the State of Matto Grosso to Corumba, on the great Paraguay River, which separates Brazil and Bolivia.

The original intention was to extend the line from the Parana River to Cuyaba, a point nearer the geographical center of Matto Grosso, but this plan has been modified in view of the evidently superior position of a terminus on the Bolivian border and on the great stream forming the boundary line between the two countries. It is now practically certain that the present administration will push this work to a conclusion before the inauguration of a new régime. This means that within two and one-half years 400 miles of railway are to be constructed and put into operation through a country wholly unexplored, several streams of continental importance must be bridged, marsh lands encountered, and the difficulties incident to carving a way through virgin and all but impenetrable forests overcome.

IMPORTANCE OF ROAD—WATER POWER—COST OF CONSTRUCTION.

The economic and political importance of such an achievement in railway construction may be seen after a glance at the map of South America. Corumba, the objective point of the railway, is in almost the geographical center of the continent. Its position on the river Paraguay gives it the same strategic importance relative to South America as is held by St. Louis in the United States. Tributary to railroads at this point would be territory covering an empire in extent, with favorable climatic conditions and with untold wealth of natural resources. The only intercourse which the Brazilian capital has with this region at the present time is via Buenos Aires and the river Plata, going thence by river boat up the Parana and the Paraguay, necessitating, at the least, a journey of three weeks. The projected railway would place the Federal capital within forty-eight hours of this point at the heart of the continent.

The railway will cross the Parana River within a few miles of the junction of that river and the River Tiete. Each of these rivers has at this point a magnitude approximately equal to that of the Mississippi at any point above its confluence with the Missouri. Within a few miles also of the point on each of these streams where the

railway will cross, each of these great rivers is broken by water falls 45 feet in altitude, having a volume of water said by the head of the Brazilian geological service to rival that of Niagara Falls, capable of furnishing power to the extent of millions of horsepower units. Here is a position which offers opportunity certainly for twin cities of the South American continent which may be destined to outrank the great industrial centers at the head of navigation on the Mississippi River.

The contract under which the company is to construct this railway provides a guaranty on the part of the Federal Government of earnings of 6 per cent on the amount employed in construction up to $16,380 per kilometer (0.62 mile) for the section to the Parana River, and up to $20,748 per kilometer for the remaining stretch of the road. At these figures the probable cost of the railway will not fall far short of $20,000,000. The French company obligate themselves to operate the railway for a short term of years, so that the Government evades the responsibility connected with the preliminary expense of putting the road into operation, and possibly loss incidental to operation during the period preceding the adjustment of the population to new opportunities offered in the territory tributary to the railroad. The contracting company has expressed a willingness to double and, if necessary, treble the present forces in order to complete the entire project within the allotted time of thirty months.

CHINA.

RESTORATION OF SOUTH MANCHURIA ROAD TO NORMAL CONDITIONS.

In transmitting a translation of the report of the South Manchuria Railway Company for the six months ended September 30, 1907, presented to the stockholders in Tokyo on December 14, Consul Roger S. Greene, of Dalny, furnishes the following information concerning the restoration of the road to normal conditions:

It was decided to rebuild the road on the standard gage (4 feet 8½ inches), and to equip it with new rolling stock. By order of the Japanese Government a double track was to be laid from Dalny to Suchiatun.

The length of line operated varied during the six months, but averaged 708 miles, and the business done was as follows: Freight, 85,141,192 ton-miles; passengers, 66,862,928 passenger-miles; at the average rates of 1.338 cents per ton-mile and 1.337 cents per passenger-mile, both these amounts being in American currency.

When the transition stage is over, as it should be within a year, a marked increase in efficiency may be looked for, and it will then be possible for the company to develop its coal business, of which great things are expected as soon as sufficient transportation can be provided.

AMERICAN ROLLING STOCK—INCOME AND EXPENDITURE.

For use in this reconstruction and for reequipping the road 50,950 tons of steel rails and accessories, 7,422 tons of bridge materials, 205 locomotives, 2,040 freight cars, 72 passenger cars, and 123 cabooses *and mail* and baggage cars were ordered and have been arriving since

last spring. All of this material was from the United States, with the exception of 980 freight-car bodies built in Japan. Pending the rebuilding of the road and the erection of the new rolling stock it was necessary to work as economically as possible with the old material, which is soon to be discarded.

The gross income from the railway and allied enterprises during the six months ended September 30, 1907, was $2,491,224, while the expenses amounted to $2,028,783, leaving a profit of $462,441, of which $122,722 was carried to reserve funds, $29,880 was distributed to the stockholders, with the exception of the Government, as a dividend at the rate of 6 per cent; $39,840 was set aside for "specific expenses," and the remainder carried forward to the next account. Of the total income $2,038,525 was from the railway proper, $322,238 from the Fushun coal mines, and the remainder from the wharves, hotels, electric plant, land rentals, etc. Of the total issue of 600,000 shares, at 200 yen ($99.60) per share, 500,000 are held by the Japanese Government, in the name of the Minister of Finance, while the remaining 100,000 are divided among 7,354 persons. Practically all the shareholders are Japanese, there being among them only about 25 Chinese, mostly domiciled in Japan, whose combined interests amount to about 500 shares.

The bonded indebtedness of the company is limited to the loan of £4,000,000 ($19,466,000), which was floated in London in July last, and brought £3,700,000 ($18,006,050. [The complete report of the transactions of the road during the six months referred to and the address of the president to the stockholders are on file for reference in the Bureau of Manufactures.]

THE SHANTUNG RAILWAY.

SUCCESSFUL BUSINESS TRANSACTED BY THIS GERMAN ENTERPRISE.

Consul Wilbur T. Gracey, of Tsingtau, furnishes the following information concerning the Shantung Railway of China, and the business transacted thereon in 1907:

The Shantung Railway is purely a German road, built with German funds, German engineers, material, and rolling stock. The contractors were Chinese. The cost of the road was $44,489 gold per mile. In granting the right to build the road China reserved the right to purchase it at the end of sixty years, or at the close of five-year periods, for twenty-five times the amount of average dividends paid during the previous five years, or at least the value of the existing plant.

The railway was built with the object of connecting Tsinanfu, the capital of Shantung Province, with the coast at the German port of Tsingtau, as well as to bring the product of the coal mines to the coast.

BUSINESS—RECEIPTS AND EXPENDITURES—PASSENGER RATES.

During the year 1907 393,800 tons of cargo were carried by the road, an increase over the year 1906 of 25,800 tons; 886,000 passengers were carried, an increase over the year 1906 of 63,000 passengers, and an average of 2,427 passengers per day.

The principal freight carried over the line was as follows, in tons: Inland—coal, 102,165; cotton goods, 17,445; kerosene, 14,752; min-

ing timber, 8,250; sugar, 7,200; paper, 6,907; coke, 7,680; wood, 5,670; iron and ironware, 4,252; rice, 3,127; mining material, 3,007. Brought toward the coast—coal, 103,140; beans, 20,610; salt, 9,082; pots and pottery, 4,732; straw braid, 4,080; coke, 3,585; oil, 2,542.

The receipts in 1906, reduced to United States currency, amounted to $1,010,706, and the expenditures to $424,870, and a dividend of 4¼ per cent was paid to the stockholders. The passengers rates on through run to Tsinanfu are approximately as follows per mile: First class, 2.5 cents; second class, 1.3 cents; third class, 0.4 cent gold; baggage, extra.

LENGTH, GAGE, AND BRIDGES—COUNTRY TRAVERSED.

The Shantung Railway has a main line of 256 miles, running from Tsingtau via Kiaochow, Kaomih, Weihsien, Ch'angloh, Ts'ingchowfu, Chowtsun, to Tsinanfu. A branch leaves the main line at Changtien and runs to the coal mines located at Poshan, a distance of 27 miles. The road has a standard gage of 4 feet 8½ inches, is single track, with rails of 66 pounds and iron ties of 110 pounds each. The embankments are about 16 feet wide, sufficient for a double track, and are rock ballasted 12 inches deep. There are no tunnels on the road, but 955 bridges were necessary. The longest bridge crosses the Tseho and is 1,550 feet in length.

The country traversed by this line is the most densely populated in China. The province contains 38,247,900 inhabitants, or 683 to the square mile. The agricultural products are abundant and consist of millet, corn, barley, sorghum, maize, peas, cotton, hemp, and the opium poppy. There are numerous fruit trees, pears, apples, peaches, apricots, plums, grapes, and jujubes. A great quantity of silk is produced, the woven stuff being called pongee, from raw material produced by worms fed on oak leaves. Besides coal, iron, copper, argentiferous lead ore, gold, diamonds, gypsum, clay, and sandstone are found in the province. The capital is a city of 100,000 inhabitants. It was formerly famous for its silks and imitation precious stones. Now it is the great commercial center of western Shantung, a vast trading mart, but not a manufacturing center. A highway connects the city with the Yellow River, 4 miles away. [A map of the province of Shantung and photographs of bridges on the Shantung Railway, which accompanied Consul Gracey's report, are filed in the Bureau of Manufactures.]

THE TIENTSIN-PUKOW RAILWAY.

LOAN SANCTIONED FOR THE CONSTRUCTION OF NEW GOVERNMENT LINE.

Consul-General James W. Ragsdale, of Tientsin, transmits a translation of the agreement between the British and Chinese Corporation (Limited) and the Chinese Government, whereby the latter sanctions the issuance by the German and British Banks Syndicate of a loan of £5,000,000 ($24,332,500) for the construction of a Government railway from the vicinity of Tientsin to connect the existing Peking-Shanhaikwan line via Techow, Chinanfu to Ihsien, along the southern boundary of Shantung. This line will hereafter be known as the northern section of the Tientsin-Pukow Railway. The line from *Ihsien to* Pukow on the banks of the Yangtze opposite Nankin shall

hereafter be known as the southern section of the Tientsin-Pukow Railway. The total distances of the two sections is 674 miles. [The translation of the agreement is filed in the Bureau of Manufactures.]

BRITISH INDIA.

PROPOSITION FOR INCREASING EFFICIENCY OF SOUTH INDIAN LINE.

According to a Madras newspaper quoted by Consul-General William H. Michael, of Calcutta, the South Indian Railway has recently made some important propositions to the government, the object of which is to increase the capital of the company in order to improve its property and to increase the efficiency of its service. Mr. Michael further summarizes:

This increase of capital could be obtained in the open market without government guaranty at satisfactory rates to shareholders, according to the chairman of the board of directors in England and the manager in India, provided the concern were placed on the footing of an ordinary limited liability company with proprietary rights in the property. The board points out that all that is necessary is a new enlarged company. Financial people of undoubted standing are understood to have already offered to underwrite all the capital likely to be required.

The plan now before the government of India and the secretary of state, if they approve it, can be introduced immediately in the case of the South Indian Railway, as the contract of this line runs out in 1910, and arrangements can be made to expedite the lease. It is equally applicable to other lines, where it could be introduced gradually as contracts terminate, if it proves successful. The project differs from others that have been put forward to the same end in not requiring the government to part with its investments in railways. These investments relieve the Indian taxpayer to an appreciable extent.

CANADA.

EXTENSION OF LINES THROUGH THE PROVINCE OF ONTARIO.

Consul E. A. Wakefield, in the following report from Orillia, describes the progress in railway building in the Canadian province of Ontario:

On June 15 next service on the Toronto to Sudbury Canadian Pacific Railway line will be inaugurated, which is expected to make a decided difference in freight and passenger traffic to Winnipeg and western points from Toronto and Buffalo. This change practically puts Toronto on the main line of the Canadian Pacific Railway and means a saving of eight hours between Toronto and Winnipeg.

The Canadian Pacific Railway is still pushing work on the Peterboro to Victoria Harbor (or Midland) branch, but the date of its completion is not mentioned as yet. The James Bay Railway (McKenzie & Mann system) has been granted a charter to build from the main line near Orillia to some point not yet named on the Georgian Bay. The Ontario government is to guarantee bonds issued for the construction of this branch (30 miles long) to the amount of $2,500,000. The Grand Trunk Railway is preparing to double track the Midland Division from Midland to Port Hope (150 miles).

during the present summer. In fact work has already begun on this undertaking. These items are indicative of the activity in railway circles in this district and illustrate the importance the lake and rail grain traffic is expected to assume in the future.

RAILWAY CROSS-TIES.

GERMANY.

EXPERIMENTS FOR THEIR PRESERVATION BY STERILIZATION.

The following translation of an article published in a leading German journal is furnished by Consul William C. Teichmann, of Eibenstock:

With the gradual diminution of the world's timber supply the problem of substitution for the wooden cross-tie in railroad construction is being given increasing attention in the railway world. Already the steel cross-tie is being introduced here and there in Europe, but the idea still prevails that by impregnation with certain chemicals the decay of the wood cross-tie may be prevented to a degree rendering it far more useful and financially preferable than the metallic substitute.

Important experiments have recently been conducted under the supervision of the management of the French Government railways for the purpose of determining the effect of sterilization of cross-ties on their durability. The decay being organic, principally, the investigators concluded that the fermentative and germinating basis of this action would be prevented by sterilization of the wood, or, rather, of the juice harboring these organic agents. Impregnation by chemical antiseptics heretofore resorted to had been more or less unsatisfactory because of the impossibility of penetrating the whole log with the liquid. Any crack in the log would therefore reopen it and lay bare such parts as were not reached by the previous impregnation. The new experiments exposed the log to a stream of steam, and the fact was established that all sizes of the wooden blocks subjected to this treatment were equally well saturated and that the heat rapidly penetrated the wood.

These interesting experiments have advanced sufficiently to awaken strong hopes of the investigators in the direction of the discovery of a method of preservation of railway cross-ties much superior to that of impregnation by chemicals.

SCOTLAND.

COMMERCIAL RESULTS OF REFORESTING—RAILWAY SUPPLIES.

Consul Maxwell Blake, of Dunfermline, quotes the following from a Scotch publication on the afforestation of Scotland, with a statement regarding railway ties:

In the West Highlands a mixture of larch, spruce, and Scotch fir is best, the first named being the most valuable crop. Larch has been cut in Scotland at 60 years of age which yielded $700 per acre. It is safer on a large scale to plant fir with the larch, as the fir will grow anywhere, which makes a crop more certain, although it is only worth 12 cents per cubic foot, against 25 cents for larch. Wherever the ground is suitable for spruce it should be planted, especially in wet soils. It is becoming a more valuable crop, and at 30 years of age is suitable for pulp and paper.

In the United States last year 103,000,000 railway ties were used, which denuded 600,000 acres of forest to supply. The British railways are supplied from Russia, 4,000,000 ties per year being needed. The Russian forests are now so much exhausted that the peasants *have to sledge* the trees for making these ties a distance of 20 miles *to get them to* the rivers.

STEAMSHIP LINES.

NORWAY.

EXCELLENT OPPORTUNITY FOR AN AMERICAN STEAMSHIP LINE.

Consul F. S. S. Johnson calls attention to the large traffic on the western coast of Norway, especially at the ports of Bergen and Stavanger. He writes:

The value of the exports from these two cities to the United States exceeded $2,000,000 last year. An American line could easily have this trade; the steamers going to Christiania and Copenhagen could stop at the named ports on their trips to and from the United States. The export trade of both Bergen and Stavanger is much larger than that of Christiania. With the opening of the railroad to the capital from Bergen, the trade with the United States will more than double. An English firm is now considering the establishment of a line of steamers between the ports named and New York, with accommodation for steerage passengers.

ENGLAND.

NEW BRISTOL DOCKS AND INCREASED TRADE WITH THE UNITED STATES.

Consul J. Perry Worden furnishes the following information concerning American shipping at Bristol and the direct shipping trade between that port and the United States in connection with the Avonmouth docks:

The first American steamer scheduled for Bristol since 1891 sailed from Philadelphia recently with a cargo of oil, and the incident, otherwise unimportant, has aroused no little interest in this old port, which once maintained a brisk shipping trade with the United States. Not less than fifty American vessels discharged here in 1875, but soon thereafter American ships began to disappear from southwest England, and the last American ship in Bristol was a three-masted schooner from Maine, which dropped anchor here in August, 1901. Since then the American flag has never floated from a vessel in Bristol waters.

A coincidence with the sailing of the American steamship mentioned seemed to be the reestablishment of a special line of English freight steamers between Philadelphia and Bristol. One of them has made the first trip of any steamer from Philadelphia to Bristol in the last six or eight years. The owners of the line, however, who acted on the urgent advice of one of the leading shipping firms here, have been compelled to draw off a vessel, reducing the number to two, owing to the small amount of cargo ready to be sent from Philadelphia to Bristol.

THE AVONMOUTH DOCKS AND AMERICAN SHIPPING.

All Bristol now concentrates its attention and hope on the gigantic enterprise of the docks at Avonmouth, which have already cost the city $12,137,747, and there is little doubt that the reason why American shipping with Bristol is so unimportant is not due, or at

least will not long remain due, to any fault of the merchants of Bristol. The docks, said to be among the finest in the world, and capable of accommodating any ship, are here, facilities for local and inland transportation are excellent, and the merchants are most favorably disposed toward American trade. Scarcely a day passes that, in conversation with shopkeepers or proprietors of large stores, I do not come upon some article of American manufacture brought here via London, Liverpool, or Southampton.

Bristol and vicinity furnish little return cargo for the United States, and the fact that Bristol shipowners have to scour the coasts for something to send back—sending at present considerable clay from Fowey—speaks favorably for their enterprise and desire to meet American shippers more than halfway. Without wishing to overstate the prospects, it does seem that with a little effort American shipping with Bristol could be greatly increased, and it is to be hoped that such an increase will occur in the near future.

ASIATIC TURKEY.

VALUE OF DIRECT STEAMSHIP COMMUNICATIONS IN EXPORT TRADE.

Consul Ernest L. Harris, writing from Smyrna, under date of January 28, has the following to say concerning the benefits that accrue to commerce through convenient ocean transportation:

It does not seem to be generally known among New York merchants, and others throughout the country, that since last September there has existed a direct steamship line between the port of Smyrna and New York. This is what a Smyrna business man, who imports a considerable quantity of American goods every year, said to me recently. If this is the case, then the fact that such a steamship line is now in existence should, in the interests of the export trade to Asia Minor, be made widely known.

Thus far only one steamer of the Moraitis Steamship Company has been making the trip, but next month two more steamers will be added, thus making three vessels of about 9,000 tons each which will cater regularly to the trade from New York to Asiatic Turkey. Since last September the one vessel which has been in service thus far has unloaded three cargoes of American merchandise at this port.

The following will give some idea, not only of the amount discharged at this port, but also of the nature of the merchandise which marks the beginning, more or less, of the export trade of the United States to this country: Twenty-three cases of rubber shoes, 1,391 cases of binding iron, 56,633 pounds of oleo oil, 3 cases of lamp chimneys and lamp fixtures, 20 barrels of cotton-seed oil, 500 sacks of flour, 2 cases of tools, 3 sewing machines, 1 case of leather, 1 churn, 100 barrels of mineral and lubricating oils, 12 cases of paper and paper signs, 6 crates of polish, 10 cases of pain killer, 2 cases of glassware, 2 motor launches, 20 cases of paraffin, and 21 cases of miscellaneous merchandise.

It is not a difficult matter to start a steamship line to any port, but to maintain it after it is established, in these days of keen competition, is quite another thing. Concerning the new line from this

port to New York, it may be now safely predicted that it will be a success. One vital point from the beginning was to secure a sufficient amount of freight for the return trip. As to the amount of cargo from here to New York, there is enough to support two direct lines. In addition to the American merchandise mentioned, the Moraitis steamer also brought back more than 1,000 return emigrants, chiefly Italians, Greeks, and Hungarians.

MEXICO.

THE REPUBLIC AIDS NEW STEAMSHIP LINE FROM GALVESTON.

According to a Mexico City paper the Mexican Government has granted a subvention of $1,000 a round trip to a steamship line which will ply between Galveston, Tex., and points in the State of Tabasco. Two trips per month are to be made. The transportation company agrees to cultivate and develop the banana and other tropical fruit trade, it being stated that many Americans have also started fruit culture on the banks of Tabascan rivers.

PORTS AND WATERWAYS.

EAST AFRICA.

CLASSIFICATION OF PLACES OF ENTRY IN PROVINCE OF MOZAMBIQUE.

As there appears to be a lack of knowledge in the United States as to the location of, the limits to the jurisdiction of, and the ports of entry comprised within the consular district of Lourenço Marquez, Consul W. Stanley Hollis makes the following explanation:

The consular district of Lourenço Marquez (which ought to be called the district of Portuguese East Africa) comprises all of Portuguese East Africa, which is officially known as the Province of Mozambique, of which Lourenço Marquez is the capital.

The ports of entry in the Province of Mozambique are (beginning from the north) as follows:

Chief custom-house	Ibo.
Subcustom-house	Porto Amelia.
Do	Palma.
Despatch post	Lurio.
Chief custom-house	Mozambique.
Subcustom-house	Antonio Ennes.[a]
Do	Fernão Velloso.
Chief custom-house	Quelimane.
Despatch post	Moma.
Chief custom-house	Chinde.
Chief custom-house	Beira.
Subcustom-house	Bartholomeu Dias.
Do	Sofala.
Do	Bazaruto.
Chief custom-house	Inhambane.
Do	Lourenço Marquez.
Despatch post	Matolla.

All invoices for goods shipped to the United States from any of these ports, and all landing certificates covering goods shipped from the United States to any of these ports, should be certified only at this consulate. As practically all goods shipped to and from the smaller ports are transshipped at other ports, either in Africa, Europe, or England, the present practice appears to be to have the

[a] Antonio Ennes is often called "Parapat."

invoices certified at the port of transshipment, instead of at Lourenço Marquez, which is the consular port for all of these ports described.

The use of the words "Delagoa Bay," to denote the port of Lourenço Marquez, should be discouraged, as the practice of calling the chief port and the capital of the Province of Mozambique by a name that is not recognized by the government of the country in which it is located, is not only discourteous to that government, but confuses and perplexes merchants, shippers, and importers, and may lead to much trouble, expense, and inconvenience to all parties concerned.

PRUSSIA.

INCREASED TRAFFIC IN ALL SAVE SEA NAVIGATION ON THE RHINE.

Consul-General Richard Guenther, of Frankfort, furnishes the following statistics, contained in a memorial submitted to the Diet with reference to the improvements made in the Prussian inland waterways from April 1, 1895, to March 31, 1907:

The freight traffic on the various waterways was as follows:

Waterways.	1895.	1906.	Waterways.	1895.	1906.
	Metric tons.	*Metric tons.*		*Metric tons.*	*Metric tons.*
Rhine	9,828,363	24,753,075	Oder near Berlin	1,409,781	3,068,984
Dortmund Ems Canal	----------	1,731,420	Warthe near Schwerin	175,035	315,154
Weser at Minden	236,925	684,494	Weichsel	595,700	991,122
Elbe at Hamburg	3,580,259	7,362,500	Memel near Tilsit	----------	1,591,515
Waterways of the Mark, near Berlin	----------	12,231,675	Moselle below Trarbach	----------	23,080

An exception to the increase in traffic is shown by the Rhine and sea navigation. The transportation of goods by Rhine-sea steamers decreased from 282,470 metric tons in 1905 to 229,570 metric tons in 1906. There is no doubt but that this Rhine-sea traffic will vastly increase as soon as the Rhine-sea steamers can pass the Rhine-Heino canal and load and unload freight directly.

CHILE.

LOADING AND UNLOADING REGULATIONS—SHIPPING OF SEAMEN.

Consul Rea Hanna reports that as a result of a meeting of the foreign consuls held in the office of the maritime governor on October 26, 1907, the Chilean authorities of Iquique have issued the following port regulations, relative to the loading and unloading of vessels, and the shipping of seamen at that port:

When a vessel is taking in ballast, other than water, the time occupied by this work is not a working lay day under the terms of the charter party. If by consent of the consignees a vessel takes ballast, other than water, and discharges cargo at the same time, the day or days occupied in so doing are not to be considered working lay days under the charter party. The word ballast includes everything available for maintaining the stability of the vessel, other than water.

It is an established custom of the port to discharge and deliver coal in sacks. Coal destined for the hulks of the regular steamer lines is excepted. Captains must give a receipt to the consignees for the sacks sent aboard for the discharge

of coal, stating the number of sacks, or their weight, in such manner that proof can be shown that the same number as received are returned.

Before the sailing of a vessel, the maritime governor shall examine the crew list, the captain who clandestinely ships seamen to be heavily fined. The shipping of seamen shall be accomplished solely through the agency of the maritime governor's department, which will take the necessary steps to secure the end in view. When a seaman is shipped this department will give immediate notice to his respective consulate, in order that the proper annotation may be made in the crew list.

SUEZ CANAL.

WIRELESS TELEGRAPHY WEIGHT TO BE EXEMPTED IN VESSELS.

Ambassador Henry White sends from Paris the following translation of a letter from the president of the Suez Canal Company announcing certain modifications in the regulations concerning the navigation of the canal:

At its meeting of March 2, 1908, the administrative council of the Suez Canal Company decided in future to include the spaces intended to hold the apparatus of wireless telegraphy and the electric projector of the vessels among the spaces deducted from the gross tonnage as being useful for the maneuver of the vessel, and under reserve of the observation of the maximum total of 5 per cent of the gross tonnage. This modification of the navigation regulation, which is applicable at once, will be inserted in the next edition of the regulation.

GREAT LAKES.

IMPROVING CHANNELS BETWEEN LAKES SUPERIOR AND ERIE.

Consul Harry A. Conant, of Windsor, Ontario, referring to the improvement of the channels on the route between Lake Superior and Lake Erie, reports that a large part of the work done in 1907 consisted of excavations at the lower end of the Detroit River, of which about 80 per cent was in Canadian waters, within his consular district. In 1907 the work performed consisted of the removal of 2,000,000 cubic feet of material, of which about 15 per cent was either limestone bed rock or the overlying material, a large portion of which required explosives. The present channel will be nearly completed in 1908, and another channel, 13 miles in length, will be commenced. The commerce passing through the Detroit River in 1907 was roughly estimated at 67,000,000 tons.

STRAITS OF MAGELLAN.

LINE OF TUGBOATS CONTEMPLATED BY A DANISH COMPANY.

The Exporter's Review of New York states that a company in Denmark is contemplating the establishment of a line of tugboats to tow vessels through the Straits of Magellan. It is estimated that 3,000 sailing vessels under all flags pass around from the Atlantic to the Pacific yearly. It frequently takes weeks to round the Horn, while vessels could ordinarily be towed through the strait in thirty-six hours. It is proposed to start the new company with a capital of about $800,000, and to station 10 powerful tugs at Punta Arenas in the strait.

MOTORING IN GERMANY.

STATISTICS OF NUMBER OF VEHICLES AND ACCIDENTS CAUSED.

Consul George Nicolas Ifft, of Annaberg, says that according to official statistics just published there were on January 1, 1908, in the German Empire 36,022 motor vehicles, of which 34,244 were passenger vehicles and 1,778 were freight vehicles. The consul presents other details as follows:

This is an increase of about 33 per cent during the year 1907. Of the passenger vehicles 19,573, or more than half, were motor bicycles. The increase was much larger, proportionally, in South Germany than in North Germany, being but 17.2 per cent in Prussia as against 84.8 per cent in Bavaria and 148.1 per cent in Hesse. In the city of Berlin the increase in the number of motor vehicles for the year was only 6, or 0.2 per cent. Of the passenger vehicles, 14,046 were used for business or professional purposes and 13,771 as pleasure and sporting vehicles. During the year 5,686 motor vehicles passed the frontier for temporary use for touring purposes in the Empire.

Statistics as to accidents due to motor vehicles are given for the year from October 1, 1906, to September 30, 1907, during which time there were 4,864 such accidents, in which 145 were killed and 2,419 injured. The figures for the dead do not include those who died after the accident as a result of their injuries, but only those killed on the spot.

DISTRIBUTION OF ACCIDENTS—IDENTIFICATION OF VEHICLE OWNERS.

The proportion of accidents to the number of machines differs widely. In the province of Brandenburg, in which is the city of Berlin, there are 5,275 motor vehicles, and during the year there were 2554 accidents involving such vehicles—about one accident for every second machine. In Berlin itself it came close to being one for every machine. In the Rhineland there was 1 accident to every 20 machines; in Prussia, as a whole, 1 to 18; and in Bavaria, Saxony, Wurttemberg, and Baden it varied from 1 accident to every 10 machines to 1 to every 18 machines. It must be noted that with the vehicles mentioned are reckoned the motor bicycles, which cause few accidents, but which constitute more than half the motor vehicles in Germany.

In 4,598 cases of accident (95.5 per cent of the total) the owner of the vehicle causing the accident was identified, and in 266 cases the owner remained unknown. Punishment by fine or imprisonment, or both, was imposed in 1,406 cases—in 1,092 cases through judgments by the courts and in 314 cases by summary fines imposed by police officers and collected on the spot.

FINANCIAL.

BANKS AND BANKING.

MEXICO.

PRESENT FINANCIAL SITUATION—PROPOSED CHANGES IN THE SYSTEM.

In transmitting the following information concerning banks and banking in Mexico, Consul W. D. Shaughnessy, of Aguascalientes, reports that, owing to the continued increase of general business and the falling off of foreign investments, due to the unsatisfactory monetary conditions in the United States and Europe, no striking developments have been made in the Republic during the past six months.

The banks of Mexico are reported to be in need of increased resources, in order to finance many proposed enterprises, and, without a doubt, any improvement in the money market will bring large capital into Mexican fields. The recent stringency, both in the United States and Europe, has not prevented the Mexican banks from paying their obligations in cash, but it has been the means of prohibiting the lending of money except upon sound security at the high rate of 12 per cent interest, an increase of 2½ per cent since last July. Foreign exchange is very high, and little or no business is being done with the United States, all drafts issued being still made payable through the clearing houses.

Upon the invitation of the Minister of Finance delegates from the banks of the Republic assembled in April for the purpose of discussing ways and means to improve the banking methods of Mexico.

PROPOSED CHANGES.

The Minister of Finance strongly advocates the necessity of a bank having its numerary values and documents in such a condition that it may convert the sum represented into cash assets at a moment's notice to cover its liabilities on presentation. He also condemns the practice of the banks in allowing interest on open accounts, the reason being that time deposits are most desirable and protect them from unlooked-for surprises. The Department of Finance has made the following suggestions:

That efficacious means be found to fortify the cash reserves against any demands made against them for speculative purposes or fluctuations in the price of precious metals or for necessary balances; that forced and artificial circulation of their bills be avoided; that an agreement be reached by which the banks will not make advances outside their territorial jurisdiction without security; that a limit be placed on the obligations which different persons may contract at each bank; that the attorneys of the banks do not enjoy greater privileges than any other private individuals; that greater vigilance be exer-

cised over the management of the banks and that more accountants and experts be engaged and special commissions instituted, and that they determine upon a better form to advise stockholders and the public of the true conditions of the banks.

STANDING OF THE BANKS.

The recent report of the Minister of Finance gives the following figures as to the standing of the banks from the annual balance sheets on June 30, 1907, as compared with the corresponding date in 1906, in Mexican dollars ($1 Mexican=49.8 cents American):

	June 30, 1906.	June 30, 1907.	Increase (+) and decrease (−).
ASSETS.			
Unpaid capital	$4,904,483	$8,601,432	+$3,696,949
Cash on hand	72,231,514	68,647,861	− 3,583,653
Notes of other banks	6,111,889	6,599,339	+ 487,450
Notes discounted	176,405,874	201,294,724	+24,888,850
Loans on collateral	92,964,809	115,966,740	+23,001,931
Loans on mortgage	18,114,256	22,320,585	+ 4,206,329
Loans secured by subsidiary mortgage guarantee	3,071,674	1,999,943	− 1,071,731
Loans of encouragement	2,780,801	2,947,770	+ 166,969
Public Funds and other immediately realizable securities	22,419,612	27,023,563	+ 4,603,951
Unliquidated accounts		875,662	+ 875,662
Real estate	6,114,938	7,405,445	+ 1,290,507
Accounts current, debtors	223,761,985	260,080,521	+36,318,536
Total assets	628,881,835	723,763,585	94,881,750
LIABILITIES.			
Subscribed capital	146,600,000	162,000,000	+16,000,000
Notes in circulation	97,134,977	98,470,528	+ 1,335,551
Mortgage bonds in circulation	15,047,100	17,276,000	+ 2,228,900
Cash bonds in circulation	2,596,900	1,590,500	− 1,006,400
Call deposits and check accounts	34,713,838	36,268,915	+ 1,555,078
Other deposits	20,852,497	27,625,327	+ 6,772,829
Accounts current, creditors	258,434,271	323,934,957	+65,500,686
Reserve funds	44,053,780	48,333,473	+ 4,279,693
Emergency funds	9,448,472	7,663,885	− 1,784,587
Total liabilities	628,881,835	723,763,585	94,881,750

The distribution of the reserve funds held by the banks on the two mentioned dates was as follows:

Banks.	June 30, 1906.	June 30, 1907.	Increase.
National Bank of Mexico	$25,992,113.40	$26,746,287.27	$754,173.87
Bank of London and Mexico	13,500,000.00	14,250,000.00	750,000.00
Other banks	14,010,138.76	15,001,070.00	990,931.24

The total cash holdings of the banks in October, 1907, was $68,565,407, and the note circulation for the same date was $94,577,098. Adding call deposits, check accounts, and note circulation there was a total of $134,739,443, against holdings amounting to $75,247,200 and $27,023,563 in public funds and other securities susceptible of immediate realization June 30, 1907.

NEW COINAGE—OLD COINAGE WITHDRAWN.

The quantity of new currency coined from May, 1905, to November, 1907, was as follows: Ten-dollar gold pieces, $44,446,120; 5-dollar gold pieces, $28,720,380; total gold, $73,166,500; 50-cent silver pieces, $26,186,519; 20 and 10 cent silver pieces, $5,499,924; total

silver, $31,686,543; 5, 2, and 1 cent bronze pieces, $1,738,147; total coinage, $106,591,190.

The following old silver and copper coins have been withdrawn from circulation, the silver coins for remintage and the copper coins to be melted and sold:

Fiscal year.	Silver pesos.	Subsidiary silver coins.	Copper.
1905-6	$800,000	$4,584,594	$57,578
1906-7	5,718,330	3,212,347	84,071
July 1 to November 25, 1907		1,064,002	37,934
Total	6,518,330	8,860,943	179,636

THE BANKING LAW—CLASSES OF BANKS.

Charters or concessions are granted in Mexico for the establishment of three distinct kinds of banks, viz, banks of issue, mortgage banks, and loan banks (bancos refaccionarios).

Banks of issue are those which are permitted to issue notes of the various denominations which are redeemable at par and at sight to bearer. The minimum capital must be $500,000, and at least 50 per cent of the total capital subscribed must be held in cash before operations are commenced. Bank notes do not constitute legal tender and can not be issued for lesser denominations than $5. Cash in hand in the bank must at no time represent less than one-half of the amount of its circulation plus its sight deposits and deposits at three days' sight. Circulation is limited to three times the amount of paid-up capital.

Banks of issue are prohibited from discounting paper of any running nature, negotiating in paper running over six months, or accepting notes or other documents for discount which do not bear two responsible signatures or are not guaranteed by mortgage security. They can not secure loans, or contract any compromise on notes of their own circulation, and are forbidden to mortgage their properties or surrender their discounts for collateral security to any third party. They can not accept mortgages on properties, except under special circumstances and with the approval of the Department of Finance, as follows: When a client's credit decreases and it becomes necessary to protect the note discounted, authorization is granted by the Department only on condition that the total amount of the mortgage in favor of the bank does not exceed one-fourth part of the paid-up capital, and only when this security is given to protect a credit which will mature within two years from the date of transaction.

Mortgage banks are those which make loans on rural and urban properties and issue bonds which accrue interest and are amortizable through special conditions and at specified date, being protected by the mortgage proper. The minimum capital must be $500,000, and 50 per cent of the total subscribed stock in cash.

Banks of loan are those banks which are authorized or expressly organized with the object of facilitating mining, agricultural, and industrial enterprises by means of privileged loans, without mortgage security. These banks issue short time credit bonds which accrue interest and are payable at specified times or dates. The minimum capital stock is $200,000.

CONCESSIONS AND CHARTERS.

Special concessions are granted for the working of each of the banks named, and in no case can one concession cover the working of

any two, neither can any one class of bank transact business pertaining to or covered by the concession of another of a different order.

Concessions are granted by Congress and decreed by the Executive of the nation, and in no case can they exceed thirty years' duration for banks of issue, and fifty years for loan banks and mortgage banks. A concession can not be secured by less than three persons, who are required to prove, within four months after it has been granted, the constitution of the stock company which proposes working it, as well as the transfer of the concession to the company.

The stock company comprises at least seven individuals, the stock being considered as registered bonds until its total value has been paid in. Concessions are granted only when the concessionaires have previously deposited bonds of the National public debt with a nominal value, at par, of at least 20 per cent of the amount of cash which the bank is required to have in its vaults for the commencement of operations. This deposit is returned as soon as business commences.

Charters for the establishment of institutions of credit are granted to private individuals or corporations, but the exploitation of such charters or concessions can only be carried on through the medium of corporations or stock companies legally organized in the Republic.

The domicile of the institution is considered at the place where the head office is located, and the capital stock can not be increased without the approval of the Minister of Finance.

Exemptions and reductions in taxation are only granted to the first bank established in each State or Federal territory. All other banks are required to pay all taxes established by law, as well as a special Federal tax of 2 per cent per annum on the total paid-up capital of the institution.

State banks can not organize or open branches out of their territory, to cancel or manipulate their circulation, except when special authorization has been granted by the Executive of the nation. This special authorization is never granted except when sufficient proof is shown that unusual commercial relations exist between various States. On no account can branches be established in the City of Mexico or the Federal district.

BANKS SUBJECT TO GOVERNMENT CONTROL.

All banks are subject to Government intervention, the interventor or inspector being named by the Federal Executive. A monthly cash balance is published, in which is shown, apart from the balances of those accounts required by law, the total cash on hand, total notes in circulation, and the amount of sight or three days' sight deposits.

Should the bank's circulation at any time exceed the amount required by law, the same must be communicated immediately in writing to the Government inspector, and the bank is required to suspend all further operations of loans until its note circulation is again found within the limit fixed by law. If this end is not reached within fifteen days, the Department of Finance will fix a convenient time, which in no case can exceed one month, so that the bank's circulation may be adjusted. Failure to comply with this is penalized by forfeiture of its concession and the liquidation of the bank's affairs.

All banks are under obligation to redeem all notes placed in circulation by them. A branch is only required to redeem those notes placed in circulation bearing a countermark showing that they have been issued from that branch. Denomination of bank notes is con-

fined to those of 5, 10, 20, 50, 100, 500, and 1,000 pesos, which are stamped by the Government upon authorization of the Department of Finance. This authorization is only given when proof is shown that the notes represent an amount according to the bank's concession.

All notes which are presented by the public, even though they are torn or impaired, are redeemable if they legibly show the number, series denomination, and corresponding signatures. Those withdrawn from circulation are destroyed by fire, according to law.

Foreign institutions of credit which make a practice of issuing credit paper can not establish branches or agencies in the Republic of Mexico to handle or negotiate their paper.

It is not doubted but that Mexico's chartered banks rank, as to solidity, among the foremost in the world, but the recent suspension by the banks of Yucatan and the stringency of the world's money market has made it necessary for the banking circles of Mexico to prepare against dangers arising from mismanagement and possible misappropriation of funds.

GERMANY.

THE DRESDNER BANK REPORT—REVIEW OF BUSINESS CONDITIONS.

Consul H. W. Harris, of Nuremberg, furnishes the following synopsis of the report of the Dresdner Bank for 1907, reviewing the business conditions which prevailed in Germany and other countries during that year:

The Dresdner Bank has branches in many of the principal business centers of Germany, and in recent years has extended its business into several foreign countries. The banking enterprises of the Dresdner in the Orient, in South America, and in Canada are stated in the report not to have been altogether successful during the past year. This was especially true of the bank's interest in a Canadian bank, in which it was associated with other banking concerns, while a branch in Mexico is stated to have been successful. The establishment of this latter branch is said to have been in accord with a long-existing desire to get a footing in Mexico, as a country having a promising future.

German imports in 1907, estimated on the basis of prices for 1906, exceeded exports by 1,728,000,000 marks ($411,264,000), as against an excess of imports over exports in 1906 of 1,663,000,000 marks ($395,794,000). Imports in tons in 1907 were 66,000,000, as against 58,000,000 tons in 1906, while exports in 1907 were 45,000,000 tons, as against 44,000,000 in 1906, the excess of imports over exports in 1907 being 21,000,000, as against an excess of 14,200,000 tons in 1906.

Increased domestic consumption of manufactures and other merchandise is referred to, but the reminder noted that with large bills to pay for raw materials, cotton, wool, ores, metals, cereals, food products, etc., Germany must fall into no condition of self-satisfaction because her factories are busy taking care of an increasing home consumption. The report says among other things:

> So long as Germany has no other alternative than to import large quantities of raw materials from foreign countries, and so long as she is not in position to balance her account for merchandise bought and sold abroad with profit

received from foreign securities held and other investments in foreign undertakings, so long must she strive with all her powers to increase her exports and make it her duty to practice fair economy in home consumption. The next few years will show whether under the sway of the present commercial treaties it will be possible for trade associations and syndicates to secure the necessary market for exports. Further, Germany must earnestly endeavor in the interest of her trade balance to increase her ownership in good foreign securities as soon as a relaxation of domestic credit demands and consequent lowering of interest rates render it possible to compete with England and France in this respect, which unfortunately has for a long time not been the case.

TAXATION IN YUKON.

SYSTEM OF TAXATION IN THE TERRITORY—REVENUE AND EXPENDITURES.

Consul George C. Cole, of Dawson, furnishes the following statistics covering taxation and the revenues and expenditures of the Yukon Territory of Canada:

The revenues of the government of the Yukon are raised by property, income, and inheritance taxes, and from licenses. Both personal and real property are appraised at their fair cash valuation by an assessor, and the levy is made on this assessment by territorial authority. All incomes over $1,800 are assessed the same as personal or real property.

Liquor licenses pay as follows: wholesale, and saloon in Dawson, $1,000; hotel in Dawson, $700; hotel in Klondike city, White Horse, and South Dawson, $500; hotel elsewhere, and brewery, $250. All the licenses are given herewith, grouped under six classes, ranging from $1,200 down to $10: (1) Banks in Dawson, in lieu of other assessments, $1,200; (2) banks elsewhere, $250; (3) general merchants, sawmills, railroads (per mile in lieu of other assessments), $100; (4) auctioneers, bottling establishments, dry goods, hardware, etc., merchants, patent-medicine vendors, $50; (5) brokers, secondhand dealers, retail butchers, druggists, pedlers, jewelers, steam laundries, livery stables, manufacturers of any kind, pawnbrokers, professions, rooming houses, wood dealers, and wood-sawing machines, $25; bakers, barbers, 1 chair (additional chairs, $5 each), billiard table (each additional table, $5), blacksmiths, bowling alleys, cigar stands or stores, freight teams (horses or mules), insurance agents, ice-cream stands, hand laundry, fruit and cigar merchants, photographers, printing offices, scavanger wagons, transfer or express, water wagon, $10. Restaurants pay a license of $15.

All furniture in use, tools of trade to the value of $200, and property of eleemosynary institutions are exempted from taxation. The levy rate in 1907 was 20 mills per $100.

The appropriations for 1908 amount to $379,986. The principal purposes for which this is to be applied are as follows: Roads, bridges, and public works, $143,785; schools, $56,575; Dawson fire department, $50,126; hospitals, charity and quarantine, $34,000; salaries and traveling expenses, $27,900; Dawson streets and street lighting, $12,500; all other purposes, $55,094. When the revenues provided for are not sufficient to defray the expenses of the Territory the deficiency is supplied by the Dominion government.

MOBILITY OF PRICES.

GERMAN STATISTICS SHOWING FLUCTUATIONS IN COMMODITIES.

Consul William C. Teichmann, of Eibenstock, reports that the foreign exchange department of the Deutsche Bank, the largest financial institution in Germany next to the Reichsbank, has computed the following interesting figures on market prices during the last three years, with the object of showing their fluctuations by quoting the highest and lowest prices of each year:

	1907.	1906.	1905.
Cotton (Bremen Cotton Exchange upland middling quotation, per ½ kilo=1.10231 pounds):			
Highest	$0.1642	$0.1547	$0.16
Lowest	.1291	.12	.0839
Lead (London closing quotation for "English lead," per English ton):			
Highest	110.71	98.55	88.21
Lowest	83.34	76.65	59.61
Coffee (Hamburg quotation, 6 p. m., for good Santos, per ½ kilo):			
Highest	.09	.0969	.0988
Lowest	.0642	.0815	.0815
Copper (London closing quotation for Chile copper, per English ton):			
Highest	537.75	498.82	392.97
Lowest	271.31	374.72	311.46
Corn (New York quotation, per bushel):			
Highest	.7637	.6087	.6325
Lowest	.5125	.485	.50
Petroleum (New York quotation, standard white, per gallon):			
Highest	.0875	.078	.077
Lowest	.075	.075	.069
Rye (Berlin quotation, 2.30 p. m., per metric ton of 2,204.6 pounds):			
Highest	51.71	42.36	41.77
Lowest	39.51	35.76	33.97
Saltpeter (Hamburg term quotation for Chile saltpeter, per 50 kilos):			
Highest	2.68	2.75	2.60
Lowest	2.37	2.27	2.14
Lard (Chicago quotation for steam lard, per 100 American pounds):			
Highest	10.175	9.85	8.10
Lowest	7.225	7.325	6.55
Silver (London closing quotation, per ounce, troy):			
Highest	.66153	.66027	.61464
Lowest	.53734	.59	.5151
Wheat:			
New York quotation for red winter wheat (per bushel)—			
Highest	1.15	.96	1.25
Lowest	.80	.77125	.8475
Berlin quotation 2.30 p. m. (per metric ton)—			
Highest	56.01	45.93	44.09
Lowest	43.38	40.94	39.92
Wool (Antwerp quotation for La Plata combed, type B, per kilo):			
Highest	1.20	1.20	1.01
Lowest	1.07	.98	.95
Zinc (London closing quotation for spelter, per English ton):			
Highest	136.87	142.95	141.73
Lowest	99.16	117.40	113.45
Tin (London closing quotation for "Straits," per English ton):			
Highest	973.30	1,041.43	805.41
Lowest	656.80	783.51	663.64
Sugar (Magdeburg quotation, 11.30 a. m., for unrefined sugar, including sack transit f. o. b. Hamburg):			
Highest	4.89	3.95	7.69
Lowest	4.13	3.71	3.82

To these statistics the consul adds the following commentary:

Among these commodities some of the metals developed the greatest fluctuations during 1907. Copper, for instance, which in March reached its highest figure during the three years quoted, receded one-

half from its high-water mark to a figure considerably below the bottom points of 1906 and 1905, although rallying some toward the close of the last year. Zinc and tin encountered marked drops. Silver showed a falling tendency during the year and from October on receded below the lowest 1906 quotations. Cotton in general developed a rising tendency during the year until the end of September when the steady fall of prices set in which prevailed for the remainder of the year. Wheat, however, reached in the New York market higher figures for 1907 than in 1906, but not the highest quotation of 1905.

Lead, which increased its price considerably in 1906 as compared with 1905, continued its rising tendency during 1907. The highest 1907 prices for corn, rye, petroleum, lard, and wool all exceeded those of 1906 and 1905. The highest 1907 Hamburg coffee quotations were below the lowest 1906 and 1905 figures. The lowest 1907 German sugar quotation was above the highest 1906 figure, but the highest 1907 price did not reach that of 1905, although the 1905 bottom point fell below that of 1907, owing to the widely diverging sugar market of 1905.

CANADIAN DEBTS AND ASSESSMENTS.

PERCENTAGE FIGURES OF SIXTEEN OF THE LARGEST CITIES.

Consul Abraham E. Smith states that in view of the difficulties the city of Victoria, in British Columbia, is laboring under to secure sufficient water for domestic and other purposes during the annual summer droughts, a determined effort is being made to secure a better water supply, and adds the following particulars:

To do this large expenditures will have to be made, either to purchase the rights of a private company owning large adjacent lakes, or to build canals and tunnels to bring water direct from the Sooke Mountains to the city. A movement is on foot to raise the assessed valuation of property in the city to meet the increased expenditure, as the municipal debt is now so large that it can not be legally increased. An investigation shows that Victoria has the largest debt per population of any city in the Dominion of Canada, except Quebec. Of the sixteen largest cities in Canada the following are the figures of the percentages of net debt per head and net debt to assessment:

Cities.	Net debt per capita.	Net debt to assessment.	Cities.	Net debt per capita.	Net debt to assessment.
		Per cent.			*Per cent.*
Ottawa	$30.05	5.76	Vancouver	$42.15	7.48
Kingston	32.10	7.52	Hamilton	42.35	8.37
Sherbrooke	34.74	9.17	Belleville	50.02	11.97
Chatham	35.77	7.90	Halifax	54.42	8.86
Sydney, Cape Breton	36.54	9.13	St. Catherines	61.50	12.79
Winnipeg	30.83	9.13	Montreal	64.43	11.84
Toronto	41.13	6.89	Quebec	94.36	33.88
St. John, New Brunswick	41.64	8.12	Victoria	66.31	11.56

It thus appears that the percentage of debt to assessment in Victoria is 11.56, while in Ottawa, which has the lowest rate in the Dominion, the percentage of net debt to assessment is only 5.76. In Vancouver the percentage is 7.48, where the net debt per head is $42.15, while in Victoria it is $66.31.

POSTAL CHECKS IN GERMANY.

INTRODUCTION OF A SYSTEM FOR THE PAYMENT OF ACCOUNTS.

Consul William Bardel, of Bamberg, reports that since the passage of the law by the Reichstag, in the latter part of February, 1908 [a copy of which is on file in the Bureau of Manufactures], to promote the payments of accounts by bank checks throughout Germany, the Bundesrath (Federal Council), in order to meet the requirements of the middle classes and small business people, resolved to introduce the following system of paying accounts by postal checks:

Any individual, firm, public authority, or organization can participate in this postal-check system. Application for participation can be made at a postal-check bureau or at a regular post-office. The applicant has to make an original deposit of not less than 100 marks ($23.80), which has to remain the minimum balance of his account. There is to be no limit as to the maximum extent of a deposit.

The depositor can dispose, at any time, of the balance due him over the fixed deposit of 100 marks, by drawing checks or by a request for transfer of certain sums from his account to other postal-check accounts. The postal-check bureau is required to notify each depositor of payments received or made for him. A depositor has the right to withdraw his account entirely at any time. In case of unseemly use of the account the postal-check bureau has the privilege of canceling the account. The Government is not to derive any financial benefit from this postal-check system, as only the cost of it is to be covered by small dues.

COSTS OF SERVICE—DEPOSITS GUARANTEED BY GOVERNMENT.

The dues to be collected for the service are to be as follows:

(1) For every cash deposit of 500 marks ($119), or any part thereof, 5 pfennigs (1.19 cents); (2) for withdrawals in cash one-eighth "pro mille" of the amount withdrawn and a fixed tax of 5 pfennigs; (3) for any transfer from one postal-check account over to another, the amount of 3 pfennigs (.714 cent).

If the account of a depositor exceeds 600 book entries per annum there will be charged, besides the dues mentioned, an extra due of 7 pfennigs (1.67 cents) for every entry to be made beyond 600. The collection of dues and of the charges for check forms is made by deductions on the respective accounts. The notifications of the check bureaus and of the post-offices to the depositors, as also between the check bureaus and the post-offices, are to be considered official business, and therefore free of postage.

For a start, postal bureaus are to be established in Breslau, Berlin, Cologne, Danzig, Frankfort, Hamburg, Hanover, Karlsruhe, and Leipzig.

In order not to have it appear that this postal-check system is to encroach on the business of savings banks and credit associations, the deposits will bear no interest.

The Reichsbank (Imperial Bank) assumes the administration of the money for account, and at the risk of the Government. Considering that the balances of these accounts have to be held ready for withdrawal at any and all times, a large part of the money safeguarded by the Reichsbank will have to be invested in values which

can easily be converted; particularly in gilt-edged inland or foreign notes, payable in gold. In order that the sources from which these deposits will principally come will be benefited the most, a part of the fund is to be given by the Reichsbank, against sufficient security and interest, to institutions for advancement of industry, commerce, and agriculture.

This decree so far only covers the imperial postal territory, to which Bavaria and Wurttemberg do not belong as yet; but it is expected that by January 1, 1909, when this system is to be introduced, the two named countries will introduce the same system and on the same basis as this. After a few years of practical experience the Reichstag will be enabled to form this decree into a law.

BANK DRAFTS IN GERMANY.

LARGE INCREASE IN THEIR CIRCULATION IN RECENT YEARS.

The following statistics, based on an article in a local periodical, covering the circulation of bank drafts in Germany, is furnished by Consul E. Theophilus Liefeld, of Freiburg:

The circulation of bank drafts in Germany during the year 1907 was greater than ever before, and the percentage of increase was as great as in the years 1900 and 1906. Judged according to the amount of tax collected on these drafts, it is claimed that for the year 1907 their face value represented 30,760,000,000 marks ($7,320,880,000).

As the time limit of these drafts is, on an average, ninety days, or a quarter of a year, it is evident that the average circulation in Germany for the year 1907 would be one-fourth of the above, viz, 7,691,000,000 marks ($1,830,458,000), against 7,015,000,000 marks ($1,666,957,000) in the preceding year. The average amounts in circulation during the last ten years, reduced to United States currency, were:

Year.	Amount.	Year.	Amount.
1898	$1,152,634,000	1903	$1,324,946,000
1899	1,245,692,000	1904	1,380,400,000
1900	1,386,588,000	1905	1,517,726,000
1901	1,366,358,000	1906	1,669,570,000
1902	1,279,488,000	1907	1,830,458,000

As the general business depression made a great decrease for the years 1901 and 1902, it was not until the year 1905 that the amount for 1900 was surpassed; nevertheless, the yearly increase since 1902 has been very great. A study of the face value of bank drafts and the population of Germany shows that in the last twenty years the amount has approximately been doubled, as will be seen by the following statement showing the circulation per capita: In 1888, $14.99; 1899, $22.61; 1901, $24.75; 1905, $25.23; 1906, $27.37; 1907, $29.51.

CEMENT.

MANUFACTURE AND USE.

GERMANY.

IRON ORE PREPARATION OF ESPECIAL VALUE IN SEA WATER.

Consul-General A. W. Thackara, in response to American inquiries, makes the following report from Berlin on the manufacture of sea-water proof cement in Germany:

While a number of cements are made in Germany, known as "Eisencement," "Kraftcement," "Erzcement," "Schlackencement," etc., which are recommended by the various companies as suitable for hydraulic purposes, in all probability the "sea-water proof" cement or ore cement (Erzcement) mentioned by the inquiry, is that manufactured at Hemmoor, a small village on the Oste River about 26 miles from Cuxhaven and about 50 miles from Hamburg. The product called Erzcement "Aegir" is produced under the German patent No. 143604, which was taken out in July, 1903, the Hemmoor company being the licensees. It is claimed that the Erzcement is a product which can be used with economy and efficiency for works constructed in sea water, in tunnels, etc., where ordinary Portland cement will deteriorate. The raw materials used in the manufacture of the product are:

(1) pure chalk, that is, chalk containing 99½ to 100 per cent of pure carbonate of lime; (2) roasted flint stone, very finely ground; and (3) finely ground ferric oxide.

METHODS OF PRODUCTION—COMPARATIVE TESTS.

The ferric oxide is obtained partly from so-called "bog-iron" ore and other pure iron ores, and partly from pure "gravel waste." After the flint stone and ferric oxide in the dry state have been ground very finely, all the three materials are worked together in a moist paste, which is of so fine a consistency that it leaves a residue of only 5 per cent maximum on a sieve of 5,000 meshes per square centimeter, or 32,400 meshes per square inch. After having been dried the paste is burned to a clinker in a rotary kiln and then ground. During the grinding a small portion of raw gypsum is added, the resulting product being the Erzcement. The director of the Hemmoor works informs me that in the laboratory extensive experiments have been made with the cement during the past three years. Three different "Erzcements" have been tested, of which one was an average sample, composed of cement taken from five batches made at different times, and two were samples, each taken from two large lots. These three Erzcement samples were compared with 12 different German Portland cements of the highest reputation, bought in the open market, with a slag cement, with a white Portland cement containing a high percentage of chalk and alumina, and with a first-class foreign Portland cement.

All test pieces were tested in fresh water, in ordinary sea water, and in water containing from three to five times more salt than sea water. Furthermore, test pieces were made, containing 2 per cent, 5 per cent, and so on up to 40 per cent of ground, unburned gypsum. While it was known that Portland cements with these high percentages of gypsum would certainly be destroyed, the test pieces were made as stated in order to ascertain whether or not such high contents of gypsum would also act deleteriously on the Erzcement test pieces. If the latter remained intact it might be taken for granted that works constructed with the Erzcement would resist the action of water containing a great percentage of sulphate.

STRENGTH INCREASES.

The three Erzcements have stood the tests well. The strength of the test pieces made from neat cement and those made from mortar, 1 part cement, 3 parts sand, has increased steadily from year to year during the three years the experiments have been carried on, not only in the air, but also in fresh water, in ordinary sea water, and in water containing three and five times more salt than the water from the sea. The test pieces to which were added up to 40 per cent of gypsum, have also remained quite intact up to the present time; they are still of excellent hardness, they sound clear when struck by a hammer, and there is no sign of cracking.

The test pieces made from the various Portland cements have for two years maintained the usual strength which might be expected of a good Portland cement. The test pieces also which were immersed in ordinary sea water have for two years stood well and still show excellent strength, although in each case less than that shown by the test pieces kept in fresh water. Their condition, however, is surpassed by that displayed by the Erzcement test pieces. In water, however, containing three times more salt than ordinary sea water, the strength shown by the Portland cement is decreasing heavily, while that of the Erzcement is increasing. The difference is still greater in the test pieces immersed in water five times more salt than sea water.

TESTS WITH GYPSUM—PRICE QUOTATIONS.

Those cements to which a great percentage of gypsum was added, as far as the Portland cements are concerned, are without exception completely destroyed, while the Erzcement pieces are still intact and show great strength thirty-six months after the immersion in sea water. One of the Erzcement pieces with gypsum has now been observed for forty-two months and yet does not show any sign of deterioration. The average strength of the Portland cement test pieces without gypsum has, during the second year of their immersion in water five times more salt than sea water, decreased 10.8 per cent, whilst the Erzcement pieces have increased in strength on an average 4.03 per cent.

From these experiments, which will be continued in the laboratories of the Hemmoor company, the director states that it might certainly be concluded that works built with Erzcement in sea water, as well as in coal mines, potash mines, railroad tunnels, and similar constructions, where they are exposed to water containing a great *percentage* of sulphate, will prove much more durable and more eco-

nomical than works constructed with the ordinary Portland cement, although the first costs of building would be greater, because the price of Erzcement is higher than the best grades of Portland cement.

The price of Erzcement manufactured by the Hemmoor company is 7.5 marks ($1.78½) per barrel of 180 kilos (397 pounds) gross, 170 kilos (375 pounds) net, free alongside ship at Hamburg, net cash. In quantities of 1,000 barrels the price is 7.25 marks ($1.72½) per barrel.

HARBOR WORK EXPERIENCE.

I send as an annex to this report copies of a technical treatise on the chemical qualities of various cements, issued by the Hemmoor company, which contains the results of experiments made with various kinds of cements. I also send a copy of the German patent covering the Erzcement "Aegir." [These will be loaned to inquirers by the Bureau of Manufactures.]

From inquiries made of disinterested parties, I learn that the Portland cement produced by the Hemmoor company is one of the best German Portland cements existing, and that the sea water proof cement manufactured by the same company is also a first-class product.

The chief engineer of the vast harbor improvements works which are being carried on at Norden writes me that since 1904 experiments have been made with Erzcement which was obtained from the Bürener Portland cement works in Westphalia. The Erzcement Beton blocks were compared with those made from Portland cement purchased from the mills at Brackwede and Misburg. In 1905 the Portland cement blocks showed visible cracks, while in 1907 they commenced to decay. The blocks made from Erzcement, however, up to the present time have lasted so well that last year it was decided to use Erzcement in all repair and new works in the district. Since the commencement of 1907, the Erzcement has been obtained from the Hemmoor factory and has given great satisfaction.

IRON ORE VERSUS THE PORTLAND.

An American engineer for the cement industry has translated a pamphlet published by a German cement company covering a series of tests of the resisting and enduring qualities of iron-ore cement and Portland cement, from which the following conclusion was reached by the company:

Through our experiments we arrive at the conclusion that the resistance of the Portland cement which we used for comparative tests depended upon two points, namely, the method of manufacture and the percentage of alumina. Those made under the wet process invariably showed greater constancy of value than those made under the dry process, supposing that the contents of alumina did not vary too much. The amount of alumina, without doubt, is the more decisive factor of the two. All experiments were convincing evidence of the fact that a cement disintegrates the sooner or suffers so much more serious damages within a given time the higher its contents of alumina. Portland cements, being low in alumina, show greater resistance in the presence of gypsum or in sea water than those of a high percentage of alumina, but, in the long run, even the former go to destruction. Iron-ore cement, as previously stated, passed the severest tests without the slightest damage—its contents of alumina never exceeding 1.5 per cent.

All the foregoing statements warrant the declaration that well-burned iron-ore cement is positively superior to Portland cement, if the cement is to be used

for marine construction, for sea-water canals, and for all cases in which the concrete comes in contact with sulphuric acid salt solutions. [The translation in full of the experiments by which the foregoing conclusion was reached is on file in the Bureau of Manufactures.]

BRAZIL.

A LARGE QUANTITY USED, BUT NONE FROM THE UNITED STATES.

Deputy Consul-General J. J. Slechta, writing from Rio de Janeiro on the use of cement in Brazil, says:

The demand for cement in Brazil is constantly increasing. Importations in 1906 were nearly 100 per cent greater than in the preceding year, amounting to about $2,180,000 for 750,000 barrels, the average for ten years being 250,000 barrels. Of this amount Germany sent $954,000, Belgium $566,000, Great Britain $344,000, and France $302,000. This is a very important trade, in which the United States does not figure at all, and, as has been previously pointed out in reports from this consulate-general, the extreme conservatism of contractors in changing brands of cement they may consider satisfactory is, and will continue to be, a serious obstacle in the introduction of American brands. Changes are made, however, and a notable example is that of a recent occurrence when a large importer of British products gave up the agency of a leading brand of English cement for one of the Belgian makes. The price for the best grades averages about $3.60 per barrel in large quantities.

The increased demand for cement is really due almost entirely to the great quantities used in hydraulic work. Consideration of the Brazilian style of architecture will convince one that the use of cement in building operations is not likely to prove popular for some time to come. Brazilians prefer showy building stone when they use stone at all, and the greater part of the structures are of brick or cheap building stone, upon the surface of which stucco and lime work is used to effect various imitations of stone architecture. Common pressed brick is for this purpose much preferred by local contractors, it being the general opinion that concrete brick do not furnish as good surface as clay. There are at present three establishments in Rio de Janeiro manufacturing cement brick, and while the product is of the best and certainly of a higher architectural value than common pressed brick, the latter sell at a price from 10 to 20 per cent less than the concrete product, and still the demand remains insignificant. Nor is it probable that concrete building stone will replace the native granite. This stone is very expensive, it is true, when worked up into the fancy style preferred here, but in foundation and similar work where concrete is at all acceptable, the price of granite excludes the possibility of competition, it being furnished at about $2.80 per cubic meter.

LARGE DEMAND FOR CEMENT.

The construction of hydraulic power plants, harbor improvement works, bridges, improvement of sewerage systems, and other similar enterprises have caused the great increase in the demand for cement. In addition to the work already under way there are plans projected for the construction of other power plants in various Brazilian cities. *The extension* of the railway system in southern Brazil will necessi-

tate several large bridges, and for these and other enterprises contemplated a large amount of cement will be needed. As a suggestion to American enterprise, it might be well to note that there is no reason why Brazil should not furnish her own cement. The head of the Brazilian geological service is authority for the statement that western Minas Geraes furnishes an extensive deposit of a very uniform quality of limestone suitable for cement compositions. Some time ago a small plant was established near the city of São Paulo, but the limestone used was of a very irregular formation and the cement turned out was not satisfactory. Within the past few months a German chemist was employed, and the resulting improvements in properly grading the stone used brought success to a more or less satisfactory extent. At present the entire output of the plant is used by the government of the State of São Paulo, the price being the same as for the best imported cement.

The limestone deposits above mentioned are easily accessible to railways and probably good rates could be secured. The Brazilian Government is very liberal in its policy toward the initiation of such enterprises, and the indications are that a careful investigation of the situation would be favorable to the establishment of one or more cement factories in Brazil. The land rates for transporting cement from western Minas would probably be as high as the trans-Atlantic rates, so that the manufacturer would have an advantage of substantially the amount of the present duty, about $1.20 per barrel, in competing with importers.

Concrete sewer pipes are being used in Rio and Nichteroy and are finding much favor. Concrete machinery for making these pipes should find sale here, as the output at present is limited and does not supply the demand. In Nichteroy the tiles used are 1 meter in diameter. They are made of reenforced concrete, though it is probable that in a climate where no frost is to be reckoned with there is little need of reenforced concrete being used if the best process is used. As for other concrete machinery, there is not likely to be a large demand in this city, but in São Paulo, Bahia, Bello, Horizante, and other smaller cities it is probable that machinery for building stone and brick would find a market.

Everything considered, the most favorable aspect of the cement trade in Brazil, so far as American enterprise is concerned, is in the matter of establishing cement plants. Such plants would open the market to American concrete machinery of various kinds and constitute an opportunity to get, at least indirectly, a share of the business in a trade which otherwise it is doubtful if American interests can secure.

GLASS TRADE.

IMPORTATIONS INTO MEXICO.

PROGRESO.

OLD CUSTOMS GIVE WAY TO MODERN UTILITIES.

Consul Edward H. Thompson, of Progreso, reports that until recently Yucatan has followed the ancient building customs of the Spanish tropics, viz, immense doors (zaguanes) and windows, grilled and barred iron openings, some stone fretwork, and almost no glass. He reviews former and present conditions of the glass trade as follows:

In some of the most palatial dwellings there were small inlaid glass panes, in various colors, placed within the upper portions of certain alcoves and arches, but they were in themselves so few and insignificant as not to be worth mentioning commercially. Previous to 1897 the glass imported was principally in the form of the elaborate glass chandeliers and mirrors. They were at that time immense and intricate affairs, of great weight and consequent cost. No social or official function was considered to be complete that was not graced by the presence of these glistening masses of pendant prisms, graceful curves, and reflecting surfaces.

Besides these were the less ornate, but still large and sometimes costly white glass cylinders, used by the better class to protect their wax tapers from the erratic wind drafts. Glass goblets, tumblers, and mirrors of the ordinary kinds were certainly in use, but even so they were not considered of sufficient importance to merit special description on the official customs list of imports. So far as records were concerned, ten years ago there was not a single large piece of clear plate glass, outside the cathedral and larger church shrines, in all Yucatan.

BEGINNING OF IMPORTATIONS.

My investigations on the importation of plate glass for show cases and windows into this consular district produced no results in figures until the fiscal year 1896–97, when there was an importation of plate and beveled glass amounting to $650 American currency. During the same period there was also imported ordinary window glass to the value of $380, and glass dishes of the cheaper grade, oil and shrine lamps, of colored and decorated glass, to the value of $1,900. Thus the total amount of glass imports into this consular district for the fiscal year of 1896–97 were about $3,000.

Since that period there has been a general awakening as to the utilitarian value of plate and ordinary glass, not only as a protection against dust and vermin, but as a means for the suitable display of fine goods, and even for ornamental decoration. Now a large show case or a handsome display of goods in a full-sized plate-glass window *has become* such a common sight in Merida and the other large cities

of Yucatan that they attract but little attention from anybody except the curious natives of the pueblos. During the fiscal year 1906–7 the following glassware was imported into Yucatan in kilos of 2.2 pounds each, the values being in American currency and including customs duties:

Articles.	Kilos.	Value.	Articles.	Kilos.	Value.
Plate, beveled, and window glass	45,818	$11,529	Glass tiles	4,588	$378
Ordinary glassware	100,910	28,585	Miscellaneous		110
Eyeglasses and watch crystals	238	2,619	Total		43,221

Austria, Germany, United States, France, England, China, and Japan, in the order of importance as named, were the exporting countries. The United States and England furnished the ordinary plain and plate glass, Austria and Germany the glass toys and cheaper glass articles, France the mirrors and chandeliers. China and Japan furnished certain classes of decorated glassware, and shrine lamps, as well as glass beads.

INTRODUCTION OF GLASS TILES—BOTTLE EXPORTS.

About five years ago the first glass tiles were brought into Yucatan, and they have proved very useful, although their sale has not proved as satisfactory as was prophesied. They are of the same size and shape as the terra-cotta ones made in France, and are designed to be placed at any desired portion in the tile roof, by the simple removal of the earthen tile and its substitution by a glass one. By their use light can be thrown on and let into many otherwise obscure passageways, storehouses, and chambers. It has always seemed to the writer that here is a chance for American bottle makers and glass manufacturers to work up their slag, or whatever their waste or cheap material may be termed, into tiles for the tropical trade.

These tiles should be of almost an opaque nature, the denser the better, as too much light passing through would be an objection. The color would probably not matter greatly, if it were uniform. A brick red and the brown bottle color are probably the ones that would be most acceptable. If any glass manufacturer cares to try the experiment, a sample tile would be sent from this consulate, which would also cooperate and furnish disinterested advice.

Although Yucatan has no glass factories nor silicate sands, the province has for several years been exporting considerable quantities of glass, viz, empty beer bottles. It was a question how to get rid of these until a foreigner came and started their shipment to the breweries in other Mexican States. Yucatan has become an extensive consumer of bottled beer.

SALTILLO.

AMERICAN TRADE ADVANTAGE IN THE STATE OF COAHUILA.

The following information as to the importation of glassware into the Saltillo district is gathered from some of the leading dealers in that Mexican city by Consul Thomas W. Voetter, and not from official sources, these, he states, not being available:

The window glass used here is manufactured in Belgium and is shipped via the port of Tampico. The quantity imported per year amounts to about six carloads, and the cost per car at the factory is given as 2,400 francs ($463.20); the cost of freight, duties, and all charges is given as $660 Mexican ($328.68 United States currency) per car, making a total cost per car laid down at Saltillo of $791.88. The dealers state that the cost of the glass is about one-third less than the best quotations they can get from factories in the United States. Part of the difference in cost arises from the fact that there is but one handling of the shipment en route, that at Tampico, and that there is less liability to breakage and less delay than if the glass were shipped from the United States. One dealer, speaking of glass and stating that he had the same experience in other lines, complains that he can not get quotations from the United States which would give prices of goods laid down at Saltillo, transportation and duties paid. He can get the quotations from Belgian dealers. He also referred to the short credits allowed by American merchants.

There is one feature about the market for window glass at this place which would give American manufacturers an advantage, provided they could meet the competition in prices and terms, which is that the users of the glass here demand sizes in inches instead of centimeters, and in many cases for particular sizes the Belgian merchants demand a higher price than for the rest of their output. This use of sizes in inches would indicate that the trade here at one time had been supplied from England or the United States.

The glass mostly used is that which would be called second class in the United States, for the Mexican import duties being calculated upon the weight of the articles, the difference in price is a great inducement to use the lighter grades.

PLATE GLASS, BOTTLES, MIRRORS, AND TABLEWARE.

Plate glass is not carried in stock by any house here. The demand is light and variable. When any building requiring plate glass is to be constructed, a special order for the sizes required is given. What little is used comes generally from Germany or Belgium.

Some wine bottles are used in the section of Coahuila around Parras, and they are imported from Germany and France. It is stated that the bottles which were imported from the United States did not give satisfaction. The bottles used by the manufacturers of mineral waters come from the United States, these having proved to be the most satisfactory. The prescription bottles used by the retail druggists come principally from Germany on account of being lower in price. Another reason is that the physicians use the metric system when prescribing, and the bottles made in Germany conform to that system in the various sizes, while those made in the United States generally do not.

The importations of mirrors of all kinds amount to about $1,000 gold per year. Nearly all come from Germany.

The sale of tableware, such as tumblers, dishes, etc., amount to about $2,500 gold per year. The importations come from several countries, but the United States, France, and Belgium are the leading sources of supply. A small quantity of fancy glassware of Austrian or Hungarian origin is kept in stock by a few retailers.

AGUASCALIENTES.

DEVELOPMENT OF TRADE—DIFFERENT CLASSES OF GOODS PURCHASED.

The importations of foreign glass into Aguascalientes is stated by Consul W. D. Shaughnessy to be comparatively small, the trade being as follows:

It is only about seven years ago that the first carload of foreign glass was placed on the market, and until this carload was received a native glass manufactured in the vicinity of Mexico City was used entirely. The latter is of a very poor quality, uneven, wavy, and of a greenish color, which, under cold climatic conditions, will crack and break.

The approximate value of window glass imported into this district is estimated at about $4,500 gold per annum. This includes the freight, duties, and all expenses at destination. All the window glass imported is purchased from Belgian manufacturers, arriving in Mexico at the ports of Veracruz and Tampico, in thin sheets from 1 to 1½ millimeters thick, and in thick sheets, double strength, from 2 to 3 millimeters thick.

Plate glass is not marketed to any extent owing to the small demand. Those having plate-glass windows in their houses or stores have imported them direct or through agents in Mexico City. Fancy glass consisting of dishes, pitchers, glasses, and colored window glass is imported mostly from the United States, Belgium, and Germany. The approximate value of this class of glassware is $3,750 gold per annum. [The names of firms at Aguascalientes handling glass are listed at the Bureau of Manufactures.]

VERACRUZ.

GERMAN SALES LEAD AT THE LARGEST ENTRY PORT.

Consul W. W. Canada states that Mexico's imports of glass at the port of Veracruz for the six months ended December 31, 1907, reached the value of $334,867, United States currency, and cover nearly every article mentioned in the tariff, the various supplying countries being as follows:

Germany furnished the bulk of the shipments, or 60 per cent, amounting in value to $204,248. France was next in order of importance with $44,326, or 13 per cent, followed by the United States with $31,017, or 9 per cent. Other countries worthy of mention are Belgium with $17,000, Austria with $15,613, and England with $15,374.

Germany's exports to Mexico consist of fine glassware, large quantities of common bottles, cheap mirrors, etc. The value of similar goods imported from the United States amounted to $18,765. This sum, however, represents more than one-half the value of all American exports of glass to this country by way of Veracruz. Belgium and Germany are the principal exporters of plate glass.

It has always puzzled American exporters how properly to declare their goods. The import duty is based upon either legal, net, or gross weight of an article. [A complete statistical table furnished by the consul showing the detailed importations of all kinds of glass

into Mexico for the last six months of 1907 from each supplying country, and the rates of duty, may be obtained from the Bureau of Manufactures.]

CIUDAD PORFIRIO DIAZ.

SOURCES OF SUPPLY OF PLATE AND WINDOW GLASS.

Consul Luther T. Ellsworth reports that chief imports of glass through the port of Ciudad Porfirio Diaz for the past two years were as follows:

Country.	Plate glass.		Window glass.	
	1906.	1907.	1906.	1907.
United States	$24,320	$23,088	$9,741	$25,956
Germany	6,520	12,175	2,789	-------

[The exports of window glass from the United States to Mexico amounted to $20,364 in the fiscal year 1906, and $29,004 in 1907, while all other glass going to Mexico from this country amounted to $490,-134 and $524,629 in these respective years. For comparative purposes it may be stated that Canada purchased from the United States $15,529 worth of window glass and $838,295 of other glass in 1907, while the next best customer is Cuba, where $170,980 worth of American glass goods were shipped in 1906. In no other country in the Western Hemisphere, Canada excepted, does the American glass trade amount to one-half that of the Cuban.—B. of M.]

MANZANILLO.

PRESENT DEMAND QUITE SMALL—INCREASING USE AT COLIMA.

Consul Carl F. Deichman, of Manzanillo, reports that the amount of window and plate glass imported into that Mexican city is as yet quite small, few of the houses being provided with glass windows. Its use, however, is increasing in the city of Colima, glass now being used in the construction of all modern buildings, and plate glass cases for the display of goods in the stores. The amount of window and plate glass imported at Manzanillo last year was 7,286 pounds, valued at $146, and came from Belguim. The imports of manufactured glass and glassware for the same period from the United States was $740, from Austria $750, and from Germany $494. [Importers of glass and glassware in Manzanillo and Colima are listed with the Bureau of Manufactures.]

EXPOSITIONS.

INTERNATIONAL DISPLAYS.

GERMANY.

MANUFACTURERS HOLD ANNUAL DISPLAY OF LEATHER GOODS AT BERLIN.

Consul-General A. W. Thackara makes the following report on the third official Exposition of the Shoe and Leather Industries, which was recently held in Berlin, under the auspices of the German Association of Shoe Dealers:

The exhibition was the most successful of its kind ever held in Germany, not only from the point of view of the promotors, but also for the exhibitors. The exhibits, which were well arranged and attractively presented, filled the two large halls of the building. The large number of machines shown for all branches of the shoe and leather industries, and the general interest manifested, evidenced the fact that in recent years Germany has made great strides in the manufacture of shoes.

It is claimed that during the five days on which the exhibition was open to the public there were 45,000 visitors. Special trains were run from several parts of Germany to Berlin, and one even from Vienna. A temporary post and telegraph office and telephone cabinets were provided, all of which were well patronized.

The exhibition, although comprehensive, was national in its scope, as practically all the exhibits were of German origin, the only exceptions being a few from Austria-Hungary, England, Denmark, and the United States. The latter consisted of machinery, carborundum wheels, shoe polishes, etc.

GROUPINGS OF THE EXHIBITION.

According to the official catalogue there were 453 exhibitors, 431 of which were German companies, firms, or private individuals. The exhibits were divided into ten different groups, under some of which quite extensive lines were shown.

In the first group there were tastefully displayed all kinds of ready-made shoes, workmen's shoes, fine men's and women's shoes, sporting shoes, shoes for house wear, over-gaiters, rubber shoes, and children's shoes, by 158 different exhibitors. From the character and style of the shoes it was easily to be seen that the nature of the German product has changed, and that the Germans are catering to the demand for the American shapes and finish.

In the second group various kinds of leather were exhibited—upper, sole, and lining leather, glove leather, leather for the manufacture of pocketbooks, automobile and wagon leather, harness, saddle, and belt leather, and leather for technical purposes. Under this division there were 62 exhibitors.

One of the most important of the groups was the third, in which were exhibited machinery and machine tools for the preparation of leather for the manufacture of shoes, for making saddles and pocketbooks, and in fact all kinds of machinery used in the shoe and leather industries. In this group there were 48 exhibitors.

In this group was by far the most interesting exhibit in the exposition—that of a Frankfort company. Its stand was fitted as a modern shoe factory—with a complete line of machinery, containing all the newest and best ideas from the United States and Germany, all in complete operation. With the aid of upward of 100 machines and a large staff of operatives, large quantities of finished shoes were turned out daily. The exhibit of this company was at all times the center of attraction.

Another interesting exhibit in this group was that of a firm at Weissenfels, which showed the Mackay system, in all its details, by machinery in operation.

There were numbers of other machines which appeared to be reproductions of American ideas built by German concerns, and some of the older types were copies of original American machines. While there was nothing that would be strikingly new to the American shoe manufacturer, yet the exposition was an object lesson which indicated the great progress which the Germans have made in the past five years in the manufacture of shoes by the adoption of improved shoemaking machinery and up-to-date shop methods.

AMERICAN INFLUENCE—MISCELLANEOUS ARTICLES.

Leather ware of various kinds, including trunks and saddlers' articles, were exhibited in group 4 by three exhibitors.

Under group 5 were shown shoe findings, such as lasts, stamps for cutting leather, thread, silk, needles, cement, colors, lacquers, polishing materials, shoe buttons, eyelets, hooks, etc. The products of the Carborundum Company were artistically and attractively displayed by its American representative in Germany. There were 48 exhibitors in this class.

Articles for saddlery and trunk manufacture were displayed in group 6 by one exhibitor.

In group 7 there were shown articles usually sold in retail shoe stores—shoe creams, blacking, trees, polishing cloths, shoe strings, fancy shoe buckles, spurs, insoles, etc.

Fixtures for fitting up retail shoe stores, including window decorations, electric and gas lighting apparatus, cash registers, calculating machines, time clocks, trying-on chairs, etc., were shown by 42 exhibitors under group 8.

In group 9 the technical journals of the shoe and leather industries were exhibited. Of these 7 were German, 4 Austrian, 1 Russian, and 1 published in Holland.

Under group 10 there were displayed by 39 exhibitors various products, all pertaining more or less to the manufacture of shoes and leather, which were not included under the foregoing groups.

CHILDREN'S SHOE COMPETITION—AMERICAN FOOTWEAR.

An interesting feature of the exposition was the children's shoe competition. There were 28 firms and private individuals entered,

and a gold medal was given to the competitor who produced the best appearing, the most hygienic, and the most correct fitting shoe for children and infants. The exhibits in this competition clearly indicated that the pointed toe which forces the child's foot into an unnatural position has been replaced by the broader forms which are more conducive to hygiene and comfort.

While the exposition has graphically illustrated the improvement which has been made in late years by the German manufacturers of shoes, the fact remains that there is still a market for the American product. A great part of the advance is unquestionably due to the remarkable demand for American shoes, created by the American shoe companies doing business in the principal cities of Germany. The Germans were quick to appreciate the merits of the American-made shoe, and to supply the wants of their customers the German manufacturers have concentrated every effort to make their products along the lines and styles of the American footwear.

Notwithstanding the strong competition from the native-made shoe which the American dealers have to meet, a great number of American shoes are purchased annually in Germany. At the present time there are seven modern, well-equipped retail establishments in this country in which only footwear made in the United States is kept and sold. In addition, the proprietors of several of the American stores have a lucrative wholesale trade among German shoe dealers in the smaller provincial cities. The business in 1907 of two of the largest American shoe dealers in Berlin surpassed all previous records.

BERLIN OFFICE APPLIANCE EXPOSITION.

Deputy Consul-General John W. Dye writes that the second annual General Exhibition of Office Requisites is scheduled to take place at Berlin from October 24 to November 3 of this year.

The exposition is backed by many of the leading office supply men of Germany, and from all present indications should be a successful show. Foreign exhibitors are cordially invited to take part and are advised to send in their applications as soon as possible, as much of the available space has already been reserved by the 75 or more firms who have applied. American concerns having small patented labor-saving devices are especially invited to exhibit, and can make arrangements for showing their goods without renting an entire booth by addressing the director, Herrn A. Willner, Exhibition Building, Zoological Garden, Berlin, Germany.

The grouping of exhibits will be as follows: (1) Mechanical time-saving devices, including typewriters, calculating machines, duplicating and copying machines, phonographs, etc.; (2) accessories for articles classified under group 1; (3) office furniture and equipment; (4) office supplies, including books, inks, etc.; (5) appliances for technical offices; (6) card and filing systems; (7) transportation and communication facilities; (8) collective exhibits; (9) business education; (10) literature.

[Full details of the foregoing classification, a list of exhibitors who have already reserved space, map of the halls, rules of the exposition, rates, and application blanks can be obtained from the Bureau of Manufactures on application.]

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Germany presents an extensive and growing market for office supplies of all kinds, and American manufacturers of practical articles wishing to extend their export business will do well to consider this opportunity.

PHOTOGRAPHIC EXHIBITION AT DRESDEN.

The German ambassador at Washington transmits a programme and announcements of the International Exposition of Photography to be held in Dresden in 1909, and at the request of the Royal Government of Saxony notifies the Government of the United States that Mr. Frank R. Frapie, of No. 6 Beacon street, Boston, Mass., delegate of the active committee, is proposed as commissioner for the United States. [The programme, etc., referred to are filed for public reference at the Bureau of Manufactures.]

CANADA.

WESTERN FOOD SHOW AND GROCERS' EXHIBITION.

Consul John E. Jones advises that Winnipeg has been selected as the place to hold the second annual Food Show and Grocers' Exhibition of Western Canada, concerning which he writes:

The success which attended the exhibit last year and the material benefits which accrued to the exhibitors has encouraged the projectors, and an exhibit is advertised for this year which will eclipse anything ever held in western Canada. The food show will open June 8 and continue for two weeks, closing in time to permit exhibitors to follow the food-show circuit, and participate in the larger industrial exhibitions. The large quantities of foodstuffs which are annually imported into western Canada emphasize the importance of these food shows to American manufacturers. The show closes in ample time for exhibitors to attend the Dominion exhibition at Calgary, which opens June 29 and closes July 9. Then exhibitors may return to Winnipeg in time for the opening of the Annual Exhibition, which begins July 11 and continues six days. [A plan of exhibition hall, with booths numbered and price of each indicated, is filed with the Bureau of Manufactures.]

SPAIN.

AMERICANS INVITED TO PARTICIPATE IN SARAGOSSA CENTENNIAL.

Señor R. Piña y Millet, Spanish minister at Washington, advises the Government of the United States that there will be held in the historic city of Saragossa from October 14 to 20 next an international congress of the war of independence and its epoch, in connection with the celebration of the centennial of the siege of that city. He transmits several copies of the programme and regulations (obtainable from the Bureau of Manufactures) and cordially invites delegates of the scientific and historic societies of the United States to participate.

EDUCATION.

MODERN ADVANCEMENT.

GERMANY.

SALARIES OF MEN AND WOMEN TEACHERS IN THE SCHOOLS OF STRASSBURG.

Noting the discussion of the question in the United States, Consul William J. Pike, of Kehl, furnishes the following statistics relative to the salaries paid to school teachers in Germany:

Strassburg is a city of some 170,000, and while it gives special educational advantages, and is regarded as a seat of learning, the salaries paid to teachers in the public schools may be taken as a fair average of the salaries paid in German cities of this class. The following statement gives the new scale of wages for men and women teachers in the elementary schools of Strassburg as recently adopted by the board of education, reduced to American currency:

Years of service.	Men teachers.		Women teachers.	
	Old scale.	New scale.	Old scale.	New scale.
1 to 3	$333.20	$342.72	$304.64	$333.20
4 to 6	371.28	390.32	316.54	380.80
7 to 9	409.36	461.72	328.44	428.40
10 to 12	437.44	509.32	352.24	476.00
13 to 15	504.56	580.72	387.94	523.60
16 to 18	561.68	652.12	423.64	571.20
19 to 21	618.80	723.52	459.34	595.00
22 to 24	675.92	794.92	495.04	618.80
25 to 27	714.00	842.52	518.84	642.60
28 to 29	752.08	890.12	* 542.64	* 666.40
30 and upward	780.64	937.72		

* Twenty-eight years and upward.

ADDITIONAL PAY AND OTHER PARTICULARS.

In addition to the foregoing the married male teachers as well as single male teachers upon whom some one is dependent for support, receive $38 per annum to the ninth year of their service, and $62 thereafter.

The male principals of these elementary schools receive an additional $119 to the above schedule. If, however, the principal is at the head of a school with less than five classes, he receives only $12 additional for each class. Hereafter, it is provided that the male principal of a school, in which there are more than five classes, must have passed the examination required of a teacher in the secondary as well as for the elementary schools. The maximum salary of a male principal or teacher, excepting the additional wage given to married men and those upon whom their families are dependent, and the extra compensation given the principals, is $938.

The male supervisor of drawing and the physical director receives an additional $119 to the regular schedule. The male teacher not having taken the final examinations entitling him to a recognized teacher's certificate can not receive a salary exceeding $333.

The women teachers who also act as principals receive in addition to the salary shown in the foregoing statement $95, but in case the school has less than five classes, they receive an additional salary of only $12 per class. Women teachers, supervising work such as drawing and domestic science, receive an addition of $119. The woman teacher who has not taken the final examination, entitling her to a recognized teacher's certificate, receives a salary of only $310. If a teacher is provided with a dwelling by the school, she pays 10 per cent of her salary for the same.

SECONDARY AND KINDERGARTEN SCHOOLS.

Both men and women teachers of the secondary schools are paid according to the schedule for the elementary teachers, but receive the following amounts additional: Men principals, $119; Women principals, $95; Men teachers, $95; Women teachers, $71.40. Besides this additional salary, the principals receive $12 for each class under their supervision. If teachers in the elementary schools are appointed to positions in the secondary schools, before they have passed all the examinations required of secondary school teachers, they receive an additional salary of only half the foregoing increase.

The superintendents of certain of the largest schools receive an additional salary of 1,200 marks ($285.60).

The salaries paid the women principals in the kindergarten schools are as follows:

Years of service.	Old scale.	New scale.	Years of service.	Old scale.	New scale.
1 to 3	$280.84	$333.20	13 to 15	$399.84	$452.20
4 to 6	316.54	368.90	16 to 18	423.64	476.00
7 to 9	352.24	404.60	19 to 21	447.44	499.80
10 to 12	376.04	428.40	22 and upward	471.24	523.60

The salaries of assistants in the kindergarten schools are as follows:

Years of service.	Old scale.	New scale.	Years of service.	Old scale.	New scale.
1	$71.40	$95.20	10	$190.40	$238.00
2	85.68	119.00	11 to 12	190.40	261.80
3	99.96	142.80	13	214.20	285.60
4	119.00	166.60	14 to 16	238.00	285.60
5 to 6	142.80	190.40	17 to 18	261.80	285.60
7 to 8	166.60	214.20	19 and upward	285.60	285.60
9	166.60	238.00			

Assistants, or monitors, begin at the age of 14 years or later, and for three years serve in that capacity under the direct instructions of the principal, receiving during this period $14 for the first year; $29 the second year, and $43 for the third year. Thereafter they are paid according to the foregoing statement. These monitors, after having served three years, are permitted to continue with their instruction in the school if their first three years have demonstrated that they are capable of becoming proficient teachers.

This new scale of salaries means an additional expenditure to the city of Strassburg of 176,000 marks ($41,888) annually.

PUBLIC SCHOOL STATISTICS.

HIGH PERCENTAGE OF ATTENDANCE—PER CAPITA COST.

Consul-General Richard Guenther, of Frankfort, reports that there *were 61,198* public schools in Germany in 1906, attended by 9,779,356

pupils, or 94 per cent of all German children of school age, leaving only 6 per cent for all other schools, including home training. Since 1901 the school attendance shows an increase of 9.1 per cent. During the same time male teachers show an increase of 10.6 per cent and female teachers an increase of 30.5 per cent. The annual average cost per pupil for public school education has increased from $11.20 in 1901 to $12.86 in 1906. The average number of scholars to each teacher was 58 in 1906, some having as high as 85 pupils and others as low as 33.

PARAGUAY.

THE GOVERNMENT IS ESTABLISHING AN EXTENSIVE SYSTEM OF SCHOOLS.

Consul Edward J. Norton, in the following report from Asuncion, describes the public school and college system of Paraguay:

The primary schools of Paraguay are under the direction of the national board of education. In 1907, at the close of the scholastic year, there were 383 primary schools in the Republic, divided into four grades. During the year 698 teachers attended to the instruction of 39,749 pupils. The number of pupils in the primary schools during the past year shows the surprising increase of 10,000 over the year 1906.

The government maintains five colleges throughout the Republic, corresponding in grade to the high schools of the United States. The teaching staff and number of students attending these colleges are shown in the following table:

College.	Professors.	Students.	College.	Professors.	Students.
Asuncion	37	417	Encarnacion	6	37
Villarrica	8	77			
Concepcion	6	37	Total	62	615
Villa Pilar	5	47			

With the exception of Asuncion, the cities in which these colleges are located are small, and only one of them—Villarrica—is connected with the capital by rail. Concepcion and Villa Pilar are situated on the Paraguay River and Encarnacion on the river Parana.

The Normal Training School for teachers is a well-directed institution. The faculty numbers 58 professors, and during the past year was attended by 119 candidates.

NATIONAL UNIVERSITY—EDUCATING YOUNG MEN ABROAD

The National University at Asuncion was founded in 1890. Its principal divisions are:

	Professors.	Students.		Professors.	Students.
Law and social science	12	61	Special college of obstetrics	6	37
Medicine	21	30			
Pharmacy	7	14	Total	52	194
Notarial training	6	52			

The National University, as well as the National colleges, are directed by the superior board of education, composed of seven members, who serve for four years. The university is well equipped with laboratories and scientific instruments of the most modern type. The

library attached to the university consists of 2,500 well-chosen volumes, and, in addition, the students have the privileges of the National Library of the Republic, founded in 1871, with over 6,000 volumes.

The National College of Agriculture and experimental farm are located a short distance from Asuncion.

Four large private schools are conducted in Asuncion, two of them under the direction of the Sisters of Charity.

Through scholarship funds the Paraguayan Government maintains about twenty young men in Europe and the United States. These young men, upon concluding their studies, are under an agreement to return to Paraguay and assist in the spread of education. Among these special students are civil and mechanical engineers, electric and hydraulic engineers, electricians, chemists, and veterinary surgeons, and those taking courses in agricultural science, arts and manufactures, and commerce. The Government is giving special attention to practical science, and has with keen foresight selected these specialties which are to-day and will be in the future necessary for the development and progress of the country.

The appropriations made in 1907 for the department of justice and public instruction exceeded $500,000. Paraguay is a small, isolated, and thinly settled country, but, nevertheless, its present system of public education has been built up under great disadvantages and at great sacrifices in less than forty years, and the country deserves much credit for its progress in this line. Plans are proposed for increasing and developing the scope of educational work, while the people are interested in their schools.

CHINA.

BRITISH ENCOURAGEMENT TO CHINESE STUDENTS.

Consul-General Amos P. Wilder forwards a newspaper clipping from Hongkong which describes an organized effort to encourage the going to England of Chinese students for education. An extensive standing committee of prominent British citizens and educators in both England and China has been formed as an adjunct of the China Association in London and will have the matter in charge. The consul-general adds the suggestion that the educational authorities in the United States effect an organization for the same purpose.

MISCELLANEOUS.

FOREIGN TARIFF CHANGES.

AUSTRALIA.

METHOD OF PAYMENT OF DUTY ON ADVERTISING MATTER.

The British Board of Trade is in receipt of the following memorandum issued by the Commonwealth Postal Department giving revised regulations regarding the duties payable on advertising matter sent by post from abroad to places in Australia.

The following provisions are made in the customs tariff respecting the duties leviable on advertising matter imported into the Commonwealth [1 English penny = 2 cents American]:

Articles.	Tariff item.	General tariff.	Tariff on goods the produce or manufacture of the United Kingdom.
		Pence per lb.	*Pence per lb.*
Advertising matter (viz, catalogues, etc.), except as specified below	356A	6	6
Catalogues, price lists, show cards or pictures issued by or referring to the goods of any manufacturer or producer not having an established place of business in Australia, and all printed matter the property of any public institution and intended for deposit and exhibition therein	356B	Free.	Free.
Australian directories, guides, and time tables	356C	6	4
Magazines containing advertisements	356D	Free.	Free.

[The general tariff is applied to goods from the United States.]

It is stated that the rates given under items 356 (A) and (C) apply to all the advertising matter mentioned therein, introduced through the post, and even when forwarded in single copies addressed to individuals, except in cases where the total duty on any one mail addressed by any one consignor to any one State of the Commonwealth does not exceed 1 shilling (24.3 cents) when the payment of duty is waived. The duty may be paid by any one of the methods specified hereunder:

(*a*) The weight of any one mail may be bulked by the consignor, and the duty payable may be remitted in one sum to the deputy postmaster-general of the State to which the advertising matter is addressed.

(*b*) The duty may be paid on the total weight of any one mail by the consignor's agents in the Commonwealth.

(*c*) If neither of the above methods be followed, duty is to be collected upon the packets containing the catalogues, etc., according to the following scale:

	Duty calculated at—	
	6d. per lb.	4d. per lb.
1d. for	3⅜ oz.	4 oz.
2d. for	6¾ oz.	8 oz.
3d. for	9 oz.	12 oz.
4d. for	12 oz.	16 oz.
5d. for	14⅞ oz.	----------
6d. for	16 oz.	----------

BRAZIL.

INCREASED DUTY ON SUGAR.

By the decree of March 27, 1908, the duty on sugar of all kinds originating in countries which do not pay any bounty on that article has been raised by the Brazilian Government from 200 to 400 reis per kilo (from $0.077 to $0.154 per 2.2 pounds).

CANADA.

REMOVAL OF EMBARGO ON HEMLOCK BARK.

Consul-General John G. Foster reports from Ottawa, under date of April 2, that on account of the accumulation of a large supply of hemlock bark in the Province of Ontario, the provincial government has, by an order in council, removed the embargo which in the past has prevented the export of bark to the United States. This order in council is to remain in force until August, 1909.

COLOMBIA.

INTERNAL REVENUE TAX ON TOBACCO—EXPORT TAX REMOVED.

Consul Isaac Manning reports from Cartagena under date of March 27 that the Colombian Government has issued a decree reducing the internal-revenue tax on tobacco manufacture from 15 cents to 10 cents per kilo (kilo 2.2 pounds.) The reduction will be made at the rate of 1 cent bimonthly. The Government has also decreed the elimination of the fluvial or inland river tax on articles exported from the country.

DENMARK.

PETROLEUM AND RICE NOW ON FREE LIST.

Dr. Maurice Francis Egan, American minister at Copenhagen, Denmark, telegraphs the Department of State that petroleum and rice are now on the free list.

JAPAN.

REFUND OF CONSUMPTION TAX ON SUGAR.

Consul-General Henry B. Miller reports under date of March 11, 1908, that the Japanese Diet had just passed the bill introduced by the Government providing for the refunding of the consumption tax on sugar when used in manufacturing condensed milk in Japan. He adds:

The date on which this new law was to become operative was April 1, 1909, in the original bill, but it was amended to read April 1, 1908, and passed as amended. It is stated by a Government official that ten years ago the product of condensed milk in this country was more than 150,000 cases (a case containing 48 1-pound cans) per annum, but that with introduction of the consumption tax on sugar in 1901 and subsequent increase in taxation, the production in recent years was reduced to less than 20,000 cases, and that the market was practically controlled by the imports.

CONSUMPTION TAX ON PETROLEUM.

Consul-General Miller likewise reports from Yokohama that by *an extra* edition of the Japanese Government Official Gazette dated

March 16, 1908, the petroleum consumption law, recently passed by the Diet, was promulgated and came into force immediately. By this law petroleum consumed in that country is taxable at the rate of 1 yen per koku, or 49.8 cents per 47.653 United States gallons. When petroleum, on which the consumption tax had been paid, is exported, the amount corresponding to the tax so paid will be refunded.

The consul-general states that the bill presented to the Diet by the Government placing crude oil on the dutiable list of the tariff has been amended in the House of Representatives, and is now in the hands of the committee in the House of Lords.

HONDURAS.

REMOVAL OF EXPORT TAX ON GOLD AND SILVER.

Consul William G. Alger reports from Tegucigalpa, under date of March 21, that the export tax of 12 per cent ad valorem on crude silver and 2 per cent ad valorem on gold in bars or dust has been abolished.

MADAGASCAR.

EXPORT DUTY ON BULLOCKS.

Consul J. G. Carter reports from Tamatave under date of January 18, 1908, that the law providing for the nonexportation of cows and heifers from Madagascar and fixing a tax of 2½ francs ($0.48), on all bullocks exported, up to December 31, 1907, has been extended to December 31, 1908.

SWEDEN.

INCREASE OF DUTY ON READY-MADE CLOTHING.

The British Board of Trade has received a copy of a dispatch from the British minister at Stockholm, reporting that on March 14 both chambers of the Swedish Diet decided to increase the import duty on ready-made clothing made of woven tissues as shown in the following statement:

	Present duty.	New duty.
	Dutiable as the principal component material with a surtax of—	
Ready-made clothing of linen or cotton, not embroidered; ready-made clothing of other materials except clothing with fringes, lace, lining, etc., dutiable at a higher rate than the principal material	50%	75%

VENEZUELA.

CLASSIFICATION OF ROOFING MATERIAL.

Minister William W. Russell reports from Caracas the following changes in the Venezuelan tariff regulations:

By an executive decree dated April 8, 1908, "plates for covering roofs, prepared with tar and pebbles," have been placed in the second class of the tariff [dutiable at 0.10 bolivar per kilo or $0.0193 per 2.2 pounds—B. of M.].

REMOVAL OF SURTAX ON MATCHES AND BITTERS.

By an executive decree dated April 8, 1908, the 30 per cent surtax on matches and Siegert bitters imported through the custom-houses of Venezuela has been removed.

IMPORTATION OF FINE-CUT TOBACCO PROHIBITED.

By the Venezuelan decree of March 20, 1908, the importation of finely cut tobacco as well as the manufacture of that article in the country is prohibited. Custom officers are authorized to confiscate any importations of tobacco of the above description. This decree does not apply to the National Cigarette Factory, in virtue of its contract with the National Executive. The decree was to go into effect twenty days after its promulgation.

ENGLISH RURAL ROADS.

INCREASED COST OF MAINTENANCE AND THE CAUSES THEREOF.

The following information concerning the increased cost of the maintenance of English roads in recent years, out of all proportion to the increase of population, etc., is furnished by Consul Frank W. Mahin, of Nottingham:

The causes of the increase in cost of the maintenance of rural English roads are two: The changes in the character of vehicular traffic and the enormous increase of the traffic. On the Nottinghamshire roads, it is officially stated, there are ten vehicles now where there was one twelve years ago. Central counties like this seem to be the worst sufferers in this regard, for they catch outside travel from every point of the compass. An official record indicates that about four-fifths of the automobiles traversing the main roads of this county are from other counties.

The average cost per mile of maintaining the Nottingham County roads was $275 in 1891, $276 in 1901, and $322 in 1907. Thus, while the cost increased but $1 in ten years under former traffic conditions, it increased $46, or 17 per cent, in six years under the present conditions.

Reports regarding some other counties show a much higher cost and a greater rate of increase than in Nottinghamshire during the past few years. The cost of maintaining all the roads in Hampshire is said to have risen in ten years from $136,000 to $316,000. The foregoing figures are astonishing, but they purport to be derived from official records. The total cost of maintaining the rural roads in this county last year was $107,000, an increase of about 17 per cent during the past decade. The increased cost of road maintenance for all England since 1900 is stated to be about 20 per cent per mile per annum.

A most vexing problem for road officials is what kind of road to make. Ordinary macadam is disrupted by the suction of automobiles and the heavy weight of traction vehicles, but is claimed by many drivers to be the best kind for horse traffic. Smooth composition roads seem durable for motor vehicles, but are objected to by many horse

drivers as slippery and dangerous. At present no kind of road appears satisfactory to both elements, but experiments are being made in this county which it is hoped will eventually result in satisfying the reasonable requirements of every kind of traffic.

NEW DUST-KILLING MACHINE.

SUPERIOR ROADWAY CLAIMED TO BE PRODUCED BY ITS USE.

Consul-General Robert J. Wynne reports that a new tar-spraying machine, which the makers claim will do away with the dust nuisance, has been tested on the roadway in front of the Horticultural Hall, Westminster, London, before practically the whole of the municipal engineers, a large number of county surveyors and suburban engineers, and two representatives appointed by the war office.

After the tar-spraying process a second machine scattered a level layer of granite grit and chips upon the tar, which, when rolled, formed a road with a fine, smooth surface, durable and dustless. A tar macadam road made in this way costs from 3s. 6d. to 4s. (85 to 97 cents) a square yard, as against ordinary macadam, which costs on an average 2s. 6d. (60 cents) a square yard.

PANAMA IMPROVEMENTS.

ISTHMIAN COMMISSION AUTHORIZED TO INSTALL SANITARY SYSTEM.

Consul James C. Kellogg makes the following report from Colon on the new sanitary works and other improvements to be effected at the Panama town of Portobello:

Near Portobello, a small town on the coast about 18 miles northeast of Colon, are located the stone quarries which are to furnish the stone for the great locks at Gatun, Canal Zone. Work on the settlement adjoining the quarries, which is carried on by the Isthmian Canal Commission, is advancing steadily. This new village or settlement is located across the bay, about a mile from the native town of Portobello, and has a present population of about 300. The buildings, completed or under construction, comprise an office building, a residence for the engineer in charge, bachelor quarters, and two barracks for Spanish laborers and one for colored laborers, with mess houses and kitchens. A dispensary and hospital have been authorized, but at present tents are being used for this purpose, and also for the quarters of the district medical officer. A complete system of sewerage and drainage will be inaugurated, together with other sanitation; work was begun in March. A reservoir is under construction, and it is expected that it will be finished in about six months. The water will be obtained from numerous mountain streams, which will furnish an abundant supply.

The Government of the Republic of Panama has given permission to the government of the Canal Zone to establish the sanitary works in the town of Portobello in order to better the hygienic conditions. The sanitary regulations relative to fumigations, quarantine, etc., are to be the same as are enforced in Bocas del Toro, Republic of Panama.

PUBLICATIONS IN ROUMANIA.

GOVERNMENT STATISTICS FURNISH INFORMATION AS TO PARTICULARS.

Consul-General Norman Hutchinson reports from Bucharest that in statistics prepared by the director of posts of Roumania the following information appears:

There are 293 different publications in the country, made up as follows: 30 dailies, 125 weeklies, 101 monthlies, and 37 which appear irregularly. The character and object of 111 of these papers are political, 24 administrative, 7 agricultural, 12 educational, 81 commercial and industrial, 10 economical and financial, 7 ecclesiastic, 6 humorous, 7 judicial, 10 military, 21 medical, 5 sporting, and 41 scientific and literary, etc.

Naturally Bucharest leads, with 160 publications to its credit—23 dailies, 31 weeklies, 70 monthlies, and 36 irregular. After Bucharest is Dolj with 20 publications, Braila with 15, and Jassy with 12.

The total number of publications handled by the Roumanian post-offices in 1906 was 131,218,322. One newspaper sent out during the year 30,600,000 copies; no other daily paper sent out more than 6,000,000.

ELECTRICITY FROM PEAT.

NEW PROCESS TO BE UTILIZED BY POWER COMPANY IN IRELAND.

Consul-General Robert J. Wynne, of London, reports that before a committee of the British House of Commons interesting details were given of the scheme for establishing in Ireland a new electric supply generated by peat gas, the first of the kind in Great Britain. The Dublin and Central Ireland Electric Power Company is seeking powers to supply electricity to portions of counties Dublin, Kildare, Queens, and Kings, and have arranged to purchase 500 acres of peat bog in the district. Hitherto one of the chief objections to the use of peat for generating power is that it contains 90 per cent of moisture and is too expensive to dry. The promoters propose to use a process, common in Germany, by which it is advantageous to retain 50 per cent of moisture in peat, thereby obtaining by-products, such as sulphate of ammonia, which alone would pay the cost of the peat.

GERMAN VITAL STATISTICS.

OFFICIAL FIGURES SHOW STEADY INCREASE IN POPULATION.

Official compilations quoted by Consul-General Richard Guenther, of Frankfort, record the number of marriages which took place in Germany during the year 1906 at 498,990, of births 2,084,739 (including 62,262 children stillborn), of deaths 1,174,464. The birth rate averages about 34 per 1,000 of the existing population. Of the deaths, 374,636 were infants under one year. Germany's population increases at the rate of about 900,000 per year, the result of excess of births over deaths. The loss by emigration has been very slight in recent years.

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FOREIGN WEIGHTS AND MEASURES

The following table embraces such weights and measures used in foreign countries as have been collated from reports of consular officers and other sources:

FOREIGN WEIGHTS AND MEASURES, WITH AMERICAN EQUIVALENTS.

Denominations.	Where used.	American equivalent.
Almude	Portugal	4.422 gallons.
Ardeb	Egypt	7.6907 bushels.
Arobe	Paraguay	25 pounds.
Arratel or libra	Portugal	1.011 pounds.
Arroba (dry)	Argentina	25.3175 pounds.
Do	Brazil	32.38 pounds.
Do	Cuba	25.3664 pounds.
Do	Portugal	32.38 pounds.
Do	Spain	25.36 pounds.
Do	Venezuela	25.4024 pounds.
Arroba (liquid)	Cuba, Spain, and Venezuela	4.263 gallons.
Arshine	Russia	28 inches.
Arshine (square)	....do	5.44 square feet.
Artel	Morocco	1.12 pounds.
Barrel	Malta (customs)	11.4 gallons.
Do	Spain (raisins)	100 pounds.
Barril	Argentina and Mexico	20.0787 gallons.
Berkovetz	Russia	361.12 pounds.
Bongkal	India	832 grains.
Bouw	Sumatra	7,096.5 square meters.
Bu	Japan	0.119 inch.
Butt	Spain (wine)	140 gallons.
Caffiso	Malta	5.4 gallons.
Candy	India (Bombay)	529 pounds.
Do	India (Madras)	500 pounds.
Cantar	Egypt	99.5 pounds.
Do	Morocco	113 pounds.
Do	Syria (Damascus)	575 pounds.
Do	Turkey	124.7036 pounds.
Cantaro (cantar)	Malta	175 pounds.
Carga	Colombia	250 pounds.
Do	Mexico and Salvador	300 pounds.
Catty	China	1.333⅓ (1⅓) pounds.
Do.[a]	Japan	1.32 pounds.
Do	Java, Malacca, and Siam	1.35 pounds.
Do	Sumatra	2.12 pounds.
Centaro	Central America	4.2631 gallons.
Centner	Bremen and Brunswick	117.5 pounds.
Do	Darmstadt	110.24 pounds.
Do	Denmark and Norway	110.11 pounds.
Do	Nuremberg	112.43 pounds.
Do	Prussia	113.44 pounds.
Do	Sweden	93.7 pounds.
Do	Vienna	123.5 pounds.
Do	Zollverein	110.24 pounds.
Chetvert	Russia	5.7748 bushels.
Chih	China	14 inches.
Coyan	Sarawak	3,098 pounds.
Do	Siam (Koyan)	2,667 pounds.
Cuadra	Argentina	4.2 acres.
Do	Paraguay	78.9 yards.
Do	Paraguay (square)	8,077 square feet.
Do	Uruguay	Nearly 2 acres.
Cwt. (hundredweight)	Great Britain	112 pounds.
Dessiatine	Russia	2.6997 acres.
Do	Spain	1.599 bushels.
Drachme	Greece	1 gram.
Dun	Japan	1 inch.
Eutchek	Asia Minor (wheat)	10.61 pounds.
Fanega (dry)	Central America	1.5745 bushels.
Do	Chile	2.575 bushels.
Do	Cuba	1.599 bushels.

[a] More frequently called "kin." Among merchants in the treaty ports it equals 1.33⅓ pounds *avoirdupois.*

FOREIGN WEIGHTS AND MEASURES, WITH AMERICAN EQUIVALENTS—Continued.

Denominations.	Where used.	American equivalent.
Fanega (dry)	Mexico	1.54728 bushels.
Do	Morocco	Strike fanega, 70 lbs.; full fanega, 118 lbs.
Do	Spain	1.6 bushels.
Do	Uruguay (double)	7.776 bushels.
Do	Uruguay (single)	3.888 bushels.
Do	Venezuela	1.599 bushels.
Fanega (liquid)	Spain	16 gallons.
Feddan	Egypt	1.03 acres.
Frail	Spain (raisins)	50 pounds.
Frasco	Argentina	2.5096 quarts.
Do	Mexico	2.5 quarts.
Frasila	Zanzibar	35 pounds.
Fuder	Luxemburg	264.17 gallons.
Funt	Russia	0.9028 pound.
Garnice	Russian Poland	0.88 gallon.
Go	Japan	0.0000817 acre.
Joch	Austria-Hungary	1.422 acres.
Ken	Japan	5.965 feet.
Klafter	Russia	216 cubic feet.
Koku (dry)	Japan	5.118 bushels.
Koku (liquid)	do	47.653 gallons.
Korree	Russia	3.5 bushels.
Kota	Japan	5.13 bushels.
Kwan	do	8.27 pounds.
Last	Belgium and Holland	85.134 bushels.
Do	England (dry malt)	82.52 bushels.
Do	Germany	2 metric tons (4,409.2 pounds).
Do	Prussia	112.29 bushels.
Do	Russian Poland	11½ bushels.
Do	Spain (salt)	4,760 pounds.
League	Paraguay (land)	4,633 acres.
Li	China	2,115 feet.
Libra (pound)	Argentina	1.0127 pounds.
Do	Castilian	7,100 grains (troy).
Do	Central America	1.043 pounds.
Do	Chile	1.014 pounds.
Do	Cuba	1.0161 pounds.
Do	Mexico	1.01467 pounds.
Do	Peru	1.0143 pounds.
Do	Portugal	1.011 pounds.
Do	Spain	1.0144 pounds.
Do	Uruguay	1.0143 pounds.
Do	Venezuela	1.0161 pounds.
Livre (pound)	Greece	1.1 pounds.
Do	Guiana	1.0791 pounds.
Load	England (timber)	Square, 50 cubic feet; unhewn, 40 cubic feet; inch planks, 600 superficial feet.
Manzana	Costa Rica	1¾ acres
Do	Nicaragua and Salvador	1.727 acres.
Marc	Bolivia	0.507 pound.
Maund	India	82⅔ pounds.
Mil	Denmark	4.68 miles.
Do	Denmark (geographical)	4.61 miles.
Milla	Honduras and Nicaragua	1.1493 miles.
Morgen	Prussia	0.63 acre.
Oke	Egypt	2.7225 pounds.
Do	Greece	2.75578 pounds.
Do	Hungary	3.0817 pounds.
Do	Hungary and Wallachia	2.5 pints.
Do	Turkey	2.81857 pounds.
Pic	Egypt	21½ inches.
Picul	Borneo and Celebes	135.64 pounds.
Do	China, Japan, and Sumatra	133⅓ pounds.
Do	Java	135.1 pounds.
Do	Philippine Islands (hemp)	139.45 pounds.
Do	Philippine Islands (sugar)	140 pounds.
Pie	Argentina	0.9478 foot.
Do	Spain	0.91407 foot.
Pik	Turkey	27.9 inches.
Pood	Russia	36.112 pounds.
Pund (pound)	Denmark and Sweden	1.102 pounds.
Quarter	Great Britain	8.252 bushels.
Do	London (coal)	36 bushels.
Quintal	Argentina	101.42 pounds.
Do	Brazil	130.06 pounds.
Do	Castile,[a] Chile, and Peru	101.41 pounds.

[a] Although the metric weights are used officially in Spain, the Castile quintal is employed in commerce in the Peninsula and colonies, save in Catalonia; the Catalan quintal equals 91.71 pounds.

FOREIGN WEIGHTS AND MEASURES, WITH AMERICAN EQUIVALENTS—Continued.

Denominations.	Where used.	American equivalent.
Quintal	Greece	123.2 pounds.
Do	Mexico	101.46 pounds.
Do	Newfoundland (fish)	112 pounds.
Do	Paraguay	100 pounds.
Do	Syria	125 pounds.
Rottle	Palestine	6 pounds.
Do	Syria	5¼ pounds.
Sagene	Russia	7 feet.
Salm	Malta	490 pounds.
Se	Japan	0.02451 acre.
Seer	India	1 pound 13 ounces.
Shaku	Japan	11.9303 inches.
Sho	do	1.6 dry quarts.
Standard	St. Petersburg (lumber measure)	165 cubic feet.
Stone	Great Britain	14 pounds.
Suerte	Uruguay	2,700 cuadras (see cuadra).
Sun	Japan	1.193 inches.
Tael	Cochin China	590.75 grains (troy).
Tan	Japan	0.245 acre.
Tierce	Newfoundland	380 pounds.
To	Japan	2 pecks.
Tola	do	180 grains.
Tonde	Denmark (cereals)	3.94783 bushels.
Tondeland	Denmark	1.36 acres.
Tsubo	Japan	35.581 square feet.
Tsun	China	1.41 inches.
Tun	Newfoundland (cod oil)	306 gallons.
Tunna	Sweden	4.5 bushels.
Tunnland	do	1.22 acres.
Vara	Argentina	34.1208 inches.
Do	Central America	32.87 inches.
Do	Chile and Peru	33.367 inches.
Do	Cuba	33.384 inches.
Do	Curaçao	33.375 inches.
Do	Mexico	32.992 inches.
Do	Paraguay	34 inches.
Do	Spain	0.99081 yard.
Do	Venezuela	33.384 inches.
Vedro	Russia	2.707 gallons.
Venetian pound	Greece and Mediterranean countries	1.05 pounds.
Vergees	Isle of Jersey	71.1 square rods.
Verst	Russia	0.663 mile.
Vlocka	Russian Poland	41.98 acres.

METRIC WEIGHTS AND MEASURES, WITH EQUIVALENTS.

Units.	Equivalents.	Units.	Equivalents.
WEIGHTS.		LIQUID MEASURE.	
Milligram ($\frac{1}{1000}$ gram)	0.0154 grain.	Milliliter ($\frac{1}{1000}$ liter)	0.0338 fluid ounce.
Centigram ($\frac{1}{100}$ gram)	0.1543 grain.	Centiliter ($\frac{1}{100}$ liter)	0.338 fluid ounce.
Decigram ($\frac{1}{10}$ gram)	1.5432 grains.	Deciliter ($\frac{1}{10}$ liter)	0.845 gill.
Gram	15.432 grains.	Liter	1.0567 quarts.
Decagram (10 grams)	0.3527 ounce avoirdupois.	Decaliter (10 liters)	2.6417 gallons.
Hectogram (100 grams)	3.5274 ounces avoirdupois.	Hectoliter (100 liters)	26.418 gallons.
Kilogram (1,000 grams)	2.2046 pounds avoirdupois.	Kiloliter (100 liters)	264.17 gallons.
Myriagram (10,000 grams)	22.046 pounds avoirdupois.	MEASURES OF LENGTH.	
Quintal (100,000 grams)	220.46 pounds avoirdupois.	Millimeter ($\frac{1}{1000}$ meter)	0.0394 inch.
Millier or tonneau—ton (1,000,000 grams).	2,204.6 pounds avoirdupois.	Centimeter ($\frac{1}{100}$ meter)	0.3937 inch.
DRY MEASURE.		Decimeter ($\frac{1}{10}$ meter)	3.937 inches.
Milliliter ($\frac{1}{1000}$ liter)	0.061 cubic inch.	Meter	39.37 inches.
Centiliter ($\frac{1}{100}$ liter)	0.6102 cubic inch.	Decameter (10 meters)	393.7 inches.
Deciliter ($\frac{1}{10}$ liter)	6.1023 cubic inches.	Hectometer (100 meters)	328 feet 1 inch.
Liter	0.908 quart.	Kilometer (1,000 meters)	0.62137 mile (3,280 feet 10 inches).
Decaliter (10 liters)	9.08 quarts.	Myriameter (10,000 meters)	6.2137 miles.
Hectoliter (100 liters)	2.838 bushels.	SURFACE MEASURE.	
Kiloliter (1,000 liters)	1.308 cubic yards.	Centare (1 square meter)	1,550 square inches.
		Are (100 square meters)	119.6 square yards.
		Hectare (10,000 square meters)	2.471 acres.

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Cotton-seed Products in Foreign Countries. Reprint, with Appendix. 255 pp. 1908.

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England's Cotton Industry. By William Whittam, jr. 54 pp. 1907.

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